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WPP 001/4 KHD 27,5 b1 1. Edition

En

PE12P100 A 920/5 RS 90 RSUV 300-600 P8/322 R Komb.-Nr. 0 401 870 039 1-10-5-7-2-11-6-8-3-12-4-9 je 30° -0,5° (-0,75) Note VDT-I-401/ 103 supersedes KHD Company F12M716 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump, Settings

Port closing at prestroke

(1,95-2,15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ^{-y}	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm 7100 strokes	100 strokes	mm	cm 1/100 strokes	mm 6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Interme	diate rated	speed	4 Lower rated speed			3 Torque control	
Degree of deflection	Control rod travel	Control rod travel		1	1	Control- lever		Control rod travel		Control rod travel
of control lever	mm 2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	9	rev/min	11
ca.68	600	16,0	1	.l		ca.34	300	8,0	580	0
Ca.00	620	10,4	with	out au	xilia	y sprin	60 300	19-21 7,7-8,3	350 320	
	635 620	9,0-10,6	1 .				320	4,5-6,3	320	1,2 1,0
20	650 69C	2,0-4,8 0-1,0	with	auxil	iary :	pring	360	0 - 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C.(104°F)	Rotational- speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	IControl rod		
rev/min	cm ¹ /1000 strokes	changed to 1 rev/min 3	rev/min	cm ¹ /1000 strokes	rev/min	cm ¹ /1000 strokes 7	rev/min 8	travel mm 9	
Take	from VDT-I-401/	103			-	•	-		
						}			

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.84

BOSCH

WPP 001/4 KHD 27,5 b 2. Edition

PE12 P 100/920/5 RS 90 Komb.-Nr. 0 401 870 023 RSUV 300-600 P8/322 R

supersedes 6.70 KHD company

1-10-5-7-2-11-6-8-3-12-4-9 je $30^{\circ} \stackrel{+}{-}0,5^{\circ} (\stackrel{+}{-}0,75^{\circ})$

F12 M 716 engine

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,95-2,15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve		
rev/min	mm (2)	cm ¹ /100 strokes	100 strokes	mm .	cm1/100 strokes	mm		
1	2	3	4	2	3	6		
1000	12,0	12,4-13,2	0,5					
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rated	speed	Control- lever deflection in degrees 7	Lowe rev/min 8	crated speed Control rod travel mm	3 To	rque control Control rod travel mm 11
ca.68	600 620 635	16,0 10,4 6,0	witho	out au	xiliar	ca 34 y spring	300 60 300	8,0 19-21 7,7-8,3	580 350 320	0 0 1,2-1,8
29	620 650 690	9,0-10,6 2,C-4,8 0-1,0	with	auxil	iary s	pring	320 360	4,5-6,3 0 - 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

W	ll load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a Idle stop	
Test oil to rev/min 1	emp 40°C (104°F) cm·/1000 strokes 2	Note changed to i rev/min 3	rev/min 4	cm/1000 strokes 5	rev/min	cm//1000 strokes 7	rev/min 8	Control rod travel mm 9
Take	from VDT-I-401/	03			-	•	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

WPP 001/4 KHD 27,5 c

1. Edition

PE12P100/920/5 RS 90 RSUV 300-750P9/322 R

Kont.-Nr. 0 401 870 024

1-10-5-7-2-11-6-8-3-12-4-9 je 30° ±0,5° (±0,75°)

supersedes KHD company F12 M716 engine

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(1.95-2.15)

mm (from BDC)

Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
	cm ¹ /100 strokes	100 strokes	2	3	6
12,0	12,4-13,2	0,5			
9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				
	12,0 9,0 12,0 15,0	12,0 12,4-13,2 9,0 5,4-6,4 12,0 11,4-12,7 15,0 17,5-18,8	travel mm 2 cm 1/100 strokes 12,0 12,4-13,2 0,5 9,0 5,4-6,4 12,0 11,4-12,7 15,0 17,5-18,8	travel mm 2 cm 1/100 strokes 2 12,0 12,4-13,2 0,5 9,0 5,4-6,4 12,0 11,4-12,7 15,0 17,5-18,8	travel mm 2 cm 1/100 strokes 4 cm 1/100 strokes 2 cm 1/100 strokes 4 cm 1/100 strokes 2 cm 1/100 strokes 3 cm 1/100 strokes 2 cm 1/100 strokes 3 cm 1/100 strokes 4 cm 1/100 strokes 2 cm 1/100 strokes 3 cm 1/100 strokes 4 cm 1/100 strokes 5 c

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	ハッノ	rque control Control rod travel mm
ca.68	750 770 800	16,0 12,5 6,2	witho	out au	xilia	ca. 31 y sprin	300 50 300	8,0 19-21 7,7-8,3	730 450 340	0
29	800	7,4-10,4 4,8-7,8 1,8-4,8	with	auxil	iary :	pring	350 400	1,4-4,2 0 - 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b fu	ill-load stop	6 Rotational- speed Irmitat		el delivery paracteristics	Starting f	uel delivery 5	4a) Idi	e stop
Test oil to revimin	emp 40°C (104°F) cm¹/1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strakes 7	rev/min 8	Control rod travel mm
Take	from VDT-I-401/	103		·	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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WPP 001/4 KHD 27,5 1. Edition

PE12 P100 A 920/5 RS 90 RSUV 300-750 P9/322 R

company KHD F12M716

Komb.-Nr. 0 401 870 034

1-10-5-7-2-11-6-8-3-12-4-9 je 30° ±0,5° (±0.75°)

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1.95-2.15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ^{-/}	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm /100 strokes	100 strokes	mm	cm*/100 strokes	mm
1	2	3	4	2	3	6
1006	12,G	12,4-13,2	0,5			
600 600 600	9,0 12,0 15,0	5,4-6,4 11,4-12,7 17,5-18,8				
200	9,0	3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travet mm		Interme	diate rate		Control- lever deflection in degrees	Lower rev/min	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.68	750 770 800	16,0 12,5 6.2	witho	ut au	16 xiliar	ca.31 y spring	300 50 300	8,0 19-21 7,7-8,3	730 450 340	0 0 1,2-1,8
29	785 800 820	7,4-10,4 4,8-7,8 1,8-4,8	with	auxil	iary s	pring	350 400	1,4-4,2 0 - 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ilt-load stop	Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a Idi	e stop
Test oil te rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1 000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
Take	from VDT-I-401/	103			-	-	-	-
		_	ì			_		

Checking values in brackets

* 1 mm less control rod travel than col 2

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iendienst: Kfz-Ausrustung nbH. Postfach 50, D-7000 Stuttgart 1: Printed in the Federal Republic of Germany Brale d'Allemagne par Robert Bosch GmbH

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WPP 001/4 KHD 27,5 e 1. Edition

En

PE12P110/920/5 RS 90 RSUV 300-750P9/322 R 1-10-5-7-2-11-6-8-3-12-4-9 je 30° -0,5° (-0,75°) Values only apply to test nozzle-and-holder assembly 0 681 443 022 and fuel-injection test tubing 1 680 750 060 Note VDT-I-401/103

supersedes KHD
company
engine
BF12 M 716
Comb.-Nr. 0 401 870 026

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,95-2,15)

mm (from BDC)

Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque-control valve)
mm 2) cm·/100 strokes	100 strokes	mm 2	cm·/100 strokes 3	mm 6
12,0	18,8-19,6	0,8			
6,0 12,0 15,0 6,0	3,4-4,4 18,2-19,5 26,7-28,4 0,9-1,9				
	12,0 6,0 12,0 15,0	travel mm 2 cm/100 strokes 12,0 18,8-19,6 6,0 3,4-4,4 12,0 18,2-19,5 15,0 26,7-28,4	travel mm 2 cm*/100 strokes 12,0 18,8-19,6 0,8 6,0 12,0 18,2-19,5 15,0 26,7-28,4	travel mm 2 cm // 100 strokes 100 strokes 4 12,0 18,8-19,6 0,8 6,0 3,4-4,4 12,0 18,2-19,5 15,0 26,7-28,4	travel

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	Control rod travel mm		Interme	ediate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	ハッノ	rque control Control rod travel mm
ca.68	750 770 800	16,0 12,5 6,2	with	out au	xilia	ca.31 y spring		8,0 19-21 7,7-8,3	730 400 320	0 0 1,2-1,8
29	785 800 820	7,4-10,4 4,8-7,8 1,8-4,8	with	auxil	iary s	pring	350 400	1,4-4,2		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	III load stop	6 Rotational speed limitat	39 F.	uel delivery naracteristics	Starting f	uel delivery 5	4a Idle stop	
rev/min	emp 40 °C (104 F) cm ^{-/} /1000 strokes	Note changed to) rev/min 3	rev/min	cm ^{1/1} 000 strakes	rev/min	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
Take	from VDT-I-401/	103			-	-	-	-
į								

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.84

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Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50, 0-7000 Stuttgart 1. Printed in the Federal Republic of Germany timprima en République Fédérale d'Altemagne par Robert Bosch GmbH.

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WPP 001/4 KHD 27.5 d

1. Edition

En

PE12F100/920/5 R\$ 90 RSUV 300-1000 P0/323 R Komb.-Nr. 0 401 870 025 1-10-5-7-2-11-6-8-3-12-4-9 je 30° -0,5° (-0,75)

supersedrs Company engine KHD F12M716

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0-2,1 (1,95-2,15)

mm (from BDC)

vel [-		Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
. (2)	cm·/100 strokes	cm ^{-y} 100 strokes	mm	cm1/100 strokes	mm
	3	4	2	3	6
12,0	12,4-13,2	0,5			
9,0 12,0	5,4-6,4 11,4-12,7				
15,0	17,5-18,8 3,6-4,6				
	12,0 9,0 12,6	cm/100 strokes 12,0 12,4-13,2 9,0 5,4-6,4 12,0 11,4-12,7 15,0 17,5-18,8	cm·/100 strokes 12,0 12,4-13,2 0,5 9,0 12,6 11,4-12,7 15,0 17,5-18,8	cm·/100 strokes cm·/100 strokes mm 2 12,0 12,4-13,2 0,5	12,0

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upne	r rated speed	rev/min	Interme	diate rate	d speed	4	Lowe	raled speed	3 Torque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- fever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
ca.56	1000 1030 1055	16,0	with	out au	xiliar	ca.18 y spring	300 50 300	8,0 19-21 7,7-8,3	980 430 340	0 0 1,2-1,8	
29	1030 1055 1200	10,0-12,0 3,8-6,0 0 - 1,0	with	auxil	iary s	pring	350 350 500	4,4-6,0 0 - 1,0			

the numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	II-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a Idle stop	
1	emp 40°C (104°F) cm*/1000 strokes	Note changed to) rev/min	rev/min	cm*/1000 strokes	rev/min	cm/1000 strokes		Control rol travel mm
		3		3	- 6		-	
Take	rom VDT-I-401/	03		:	-	-	-	-
			ĺ					

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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Geschaftsbereich KM. Kundendienst. Kfz-Ausruslung. C. 1980 by Robert Bosch GmbM. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbM.

WPP 001/4 KHD 27,5 d1 1. Edition

engine

PE12P 100 A 920/5 RS 90

RSUV 300-1000 P0/323 R

supersedes" KHD company F12M716

Komb.-Nr. 0 401 870 035

1-10-5-7-2-11-6-8-3-12-4-9 je 30° ±0,5° (±0,75°)

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15)

Testoil-ISO 4113

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ^{-/} 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1		3	4	2	3	6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 1 1	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed	Control lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	IL 3 /	rque control Control rod travel mm
ca.56	1000 1030 1055	16,0 10,8 6,0	witho	without auxiliar			300 50 300	8,0 19-21 7,7-8,3	980 430 340	0 0 1,2-1,8
20	1030 1055 1200	10,0-12,0 3,8-6,0 0- 1,0		auxil	iary s	pring	350 500	4,4-6,0 0 -1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

שש	ill load stop	Rotational speed limitat Speed limitat			Starting f	uel delivery 5	4a) Idle stop		
Test oil to rev/min	emp 40°C (104°F) cm /1000 strokes 2	Note changed to 1 rev/min 3	rev/min 4	cm:/1000 strokes	rev/min	cm v1000 strokes 7		Control rod travel mm 9	
Take	from VDT-I-401/	103							

Checking values in brackets

* 1 mm less control rod travel than cot 2

6.84

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WPP 001/4 KHD 27,5 f
1. Edition

Eπ

PE12P100/920/5 RS 90 RSU 300/1000 PO/331 R

omb.-Nr. 0 401 870 028 1-10-5-7-2-11-6-8-3-12-4-9 je 30° -0,5° (-0,75°) Note VDT-I-401/103 supersedescompany KHD engine FR M 716

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,95-2,15)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes	c:m '/ 100 strokes 4	mm 2	cm /100 strokes	mm 6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				•

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

18 ' /	rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lowe rev/min 8	r rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm
ca.68	1000 1050 1100	15,8-16,2 8,8-10,2 3,4-5,2	-	-	-	ca.34	100	7,3 19-21	980 500 0 300	0 0 1,7-2,3
29	1150 1200	0,9-3,0 0 - 2,0					200 300 350 450	10,0-15, 7,0-7,6 4,0-5,4 0 - 1,		1,7-2,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a) Idle stop	
Test oil to rev/min 1	emp 40°C (104°F) cm //1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
Take	from VDT-I-401/	103			-	•	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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WPP 001/4 KHD 27,5 f1 1. Edition

PE12F100A 920/5 RS 90

RSU 300/1000 PO/331 R

supersedes

Komb.-Nr. 0 401 870 036

1-10-5-7-2-11-6-8-3-12-4-9 je 30° -0,5° (-0,75°)

KHD company F12M 716 engine

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

7

2,0-2,1 (1,95-2,15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/min	mm 2	cm //100 strokes 3	cm 7 100 strokes 4	mm 2	cm ^{-/} 100 strokes	mm 6
1000	12.0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travet mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.68	1000 1050 1100	15,8-16,2 8,8-10,2 3,4-5,2	-	•	•	ca.34	300 100 200	7,3 19-21 10,0-15,	980 500 300	0 0 1,7-2,3
29	1150 1200	0,9-3,0 0 -2,0					300 350 450	7,0-7,6 4,0-5,4 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ill-load stop	Rotational- speed limitat 3a Fuel delivery characteristics			Starting f	uel delivery 5	4a Idle stop		
Test oil to	emp_40°C (104°F) cm ¹ /1000 strokes	Note changed to) rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
Take	from VDT-I-401/	103			-	-	-	-	
			l			1			

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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WPP 001/4 KHD 9,2 b

1. Edition

En

PE 4 P 100/420 LS 99

RSV 250-1000 P 7/304 R

supersedes KHD Company F 4 M 716

engine

Komb.-Nr. 0 401 874 022

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0**-2**,1 (1,95-2,15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/min	mm 2	cm:/100 strokes 3	cm ^{-/} 100 strokes 4	mm 2	cm:/100 strokes	mm 6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rated	speed	Control lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1(3)	rque control Control rod tcavel mm
ca. 68	1000 1050 1080	16,0 9,0 4,0	witho	ut aux	kiliar	ca. 28 y spring	300 100 300	6,0 19-21 5,7-6,3	980 450 340	
23	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	with	auxili	iary s	pring	350 450	3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

C	ull-load stop	6 Rotational- speed limitat	3a Fuel delivery characteristics		Starting f	Starting fuel delivery 5		4a Idle stop	
Test oil to	emp 40°C (104°F) cm/1000 strokes	Note changed to) rev/min 3	rev/min 4	cm1/1000 strokes	rev/min	cm ¹ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
Take	From VDT-I-401/	03			-		-	-	

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fedérale d'Allemagne par Robert Bosch GmbH.

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WPP 001/4 KHD 9,2 b 1

1. Edition

PE 4 P 100 A 420 LS 99

RSV 250-1000 P 7/304 R

supersedes:* KHD

Komb.-Nr. 0 401 874 023

company F 4 M 716

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Print closing at prestroke (1.95-2.15)

2,0-2,1 ,95-2,15) mm (from BDC)

Rotational Speed	Control rod travei	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque-control valve)
revimin	mm (2)	cm·/100 strokes	cm ^{-y} 100 strokes	mm .	cm ^{-/} 100 strokes	mm
1	2	3	4	2	3	6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control lever deflection in degrees 7		raled speed Control rod travel mm 9	IL 9 /	rque control Control rod travel mm
ca. 68	1000 1050 1080	16,0 9,0 4,0	with	out au	xiliar	ca. 28 y spring	100	6,0 19-21	980 450 340	0 0 1,2-1,8
29	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	with	auxil	iary s	pring	300 350 450	5,7-6,3 3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	nii load stop	Rotational speed limitat		nel delivery naracteristics	Starting fi	uel delivery 5	4a Idi	e stop ==
rev/min	cm ^{-/1000} strokes	changed to) rev/min 3	rev/min 4	cm ^{1/} 1000 strokes 5	rev/min	cm ⁴ /1000 strokes 7	rev/min 8	travel mm 9
Take	from VDT-I-401/	103			-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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Geschaftsbereich KH. Kundendienst: Kf2-Ausrustung... 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany tmprime en Republique Féderale d'Allemagne par Robert Bosch GmbH.

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WPP 001/4 KHD 9,2 a

1. Edition

PE 4 P 100/420 LS 99

RSV 250-1000 P 7/312 R

supersedes =

Komb.-Nr. 0 401 874 021

company KHD

Note VDT-I-401/ 103

engine F 4 M 716

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testol-180 4113

2,0-2,1 (1,95-2,15)

mm (from BDC)

Rotational speed rey/min	Control rod travel	Fuel delivery	Difference cm ^{-/} 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1	2	3	4	2 .	3	6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Argust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate ra	ated speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm 11
ca. 68	1000 1050 1080	16,0 9,0 4,0	with	out a	auxiliar	ca. 28 y spring	100	6,0 19-21	980 450 340	0 0 1,2-1,8
23	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	ł	aux.	iliary s	pring	300 350 450	5,7-6,3 3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill load stop	Rotational speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	4a Idi	e stop
rev/min	cm /1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm 71000 strokes 7	rev/min 8	travel mm 9
Take	rom VDT-I-401/	03			-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fedérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 KHD 18,3 f

1. Edition

PE 6 P 100/420 LS 111

RSV 250-1000 P 7/317 R

supersedes. KHD company F 6 M 716

Komb.-Nr. 0 401 876 061

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0-2,1 (1.95-2.15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm1/100 strakes	cm ¹ / 100 strakes	mm	cm1/100 strokes	mm
1		3	4	2	3	6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lowe rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca. 68	1000 1050 1080	16,0 9,0 4,0	witho	without auxiliar			300 100	6,0	980 450 340	0 0 1,2-1,8
29	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	with	auxil	iary s	pring	300 350 450	5,7-6,3 3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	ili-load stop	6 Rotational speed limitat		iel delivery paracteristics			4a ld!	e stop
rev/min	emp=40°C (104°F) cm*/1000 strokes	Note changed to) rev/min	rev/min	cm ¹ /1000 strokes	rev/min	cm ¹ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
Take	from VDT-I-401/	103			-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

Geschaftsbereich KM-Kundendienst-Kfz-Ausrustung c 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Alternagne par Robert Bosch GmbH

WPP 001/4 KHD 18,3 f 1

1. Edition

PE 6 P 100 A 420 LS 111

RSV 250-1000 P 7/317 R

compan KHD engine F 6 M 716

Komb.-Nr. 0 401 876 139

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,0-2,1

mm (from BDC)

Port closing at prestroke

(1,95-2,15)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm1/100 strokes	cm ¹ / 100 strokes	mm	cm 1/100 strokes	mm
1	2	3	4	2	3	6
1000	12,0	12,4-13,2	0,5			
600 600 600	9,0 12,0 15,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				
200	9,0	3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Intern	nediate rat	ed speed	(4)				rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
ca. 68	1000	16,0	1			ca. 28	300	6,0	980	0
	⁻ 1050 _1080	9,0 4,0	wit	nout a	uxilia	y sprinc] 100	19-21	450 340	1,2-1,8
2 a	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	witl	h auxi	liary	spring	300 350 450	5,7-6,3 3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-toad stop	Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a Idi	e stop Control rad
rev/min	emp 40 C (104 F) cm ^{1/1000} strokes 2	Note changed to 3 rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm /1000 strokes 7	rev/min 8	travel mm 9
Take	from VDT-I-401/	103			-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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WPP 001/4 KHD 18,3 g

1. Edition

En

PE 6 P 100/420 LS 111

RSV 250-1000 P 7/361 DR

supersedes KHD company

Komb.-Nr. 0 401 876 132

Note VDT-I-401/ 103

company F 6 M 716

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,0-2,1 Port closing at prestroke (1,95-2,15)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (to-que-control valve)
rev/min	mm 2	cm 1/100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm 1100 strokes	mm 6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

11 1	rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	d speed	Control- lever deflection in degrees 7	Lowe rev/min 8	r rated speed Control rod travel mm 9	IL 9 J	rque control Control rod travel mm
ca. 68	1000 1050 1080	16,0 9,0 4,0	witho	ut au	xiliar	ca. 28 y spring	100	6,0	980 630 340	0 0,9-1,1 0,9-1,1
29	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	with	auxil [.]	iary s	pring	300 350 450	5,7-6,3 3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

שפוו	ill-load stop emp 40 C (104 F)	Rotational- speed limitat Note changed to 1		et delivery aracteristics	Starting findle	uel delivery 5	4a Idi	Control rod
rev/min	cm ¹ /1000 strokes 2	rev/min 3	rev/min 4	cm:/1000 strokes 5	rev/min 6	cm ¹ /1000 strokes 7	rev/min 8	travel mm 9
Take	from VDT-I-401/	103			- 4	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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WPP 001/4 KHD 18,3 g 1

1. Edition

<u>En</u>

PE 6 P 100 A 420 LS 111 Komb.-Nr. 0 401 876 133 RSV 250-1000 P 7/361 DR

supersedes KHD company F 6 M 716

engine

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 41

2,0-2,1 (1,95-2,15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm·/100 strokes 3	mm 6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 to	rque control Control rod travel mm 11
ca. 68	1000 1050 1080	16,0 9,0 4,0	witho	without auxiliar			100	00 19-21	980 630 340	0 0,9-1,1 0,9-1,1
20	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	with	auxil	iary s	pring	300 350 450	5,7-6,3 3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

49	II-load stop	Rotational- speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	4a Idle stop	
rev/min	emp 40°C (104°F) cm/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm*/1000 strokes	rev/min 6	cm ¹ /1000 strokes 7	ł	Control rod travel mm 9
Take	from VDT-I-401/	103			-	-	-	-
l								

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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Testoil-ISO 411

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WPP 001/4 FIA 13,8 a 5 1. Edition

En

PE 6 P 120 A 720 RS 167 RQ 225/1100 PA 703 Komb.-Nr. 0 401 846 496 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067 supersedes companyFiat engine: 8210.02 184 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1.95 - 2.15)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference 'cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100 225		17.0 - 17.3	0,5 (0,8			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider ck	1	Full-load s	•	-	cifications (4)	ldle spec Setting p	•		cifications (5)	Torque d	(3)
rev/min 1	Control rod travel mm 2	O	rev/min 3	Control red travel rnm 4	Control red travel rnm 5	rev/min 6	rev/min 7	Control red travel mm 8	rev/min	Control rod travel mm 10	rev/min 11	Control rod Control rod
550	15,6 -	16,	4 550	16,0	10,1 4,0 1350	1145-1160 1185-1215 0,1,0	ŀ	7,6	225	nin.9,1 7,5-7,7 405 = 2,0	}	11,1-11,2 11,1-11,3
	<u> </u>		<u> </u>		<u></u>		<u> </u>	L	145 -	 1160 min-1		1 mm less contro

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor of Test oil ten	elivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	3Ъ)	Starting findle spee	uel delivery d Control
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	1	rev/min 6	red travel cm ³ /1000 strokes / mm 7
1100	170,0-173,0 (167,0-176,0)	-	-	-		-	-

Checking values in brackets

7.84

BOSCH

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WPP 001/4 MB 11,8 b 1 2. Edition

En

PE 6 P 110/720 RS 176

RSV 300-1100 P 1/303 R

Komb.-Nr. 0 401 876 110

supersede 7.78

company Daimler-Benz
om 355

schmitt Schneefräse

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8-2,9 (2,75-2,95)

mm (from BDC) RW = 9,0-12,0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes 3	cm·/ 100 strokes 4	mm 2	cm ^{-/} 100 strokes	mm 6
1100	12,7+0,1	13,5-13,7	0,4 (0,8)			
300	7,5-7,7	1,2-1,8	0,4 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

11 1	rated speed		Interme	diate rated	speed	(1)	Lower	rated speed	3 Torque control		
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		travel	
of control lever	mm 2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	mm 9	rev/min	11	
max.	800	0,3-1,0	-		-	ca.21	300	7,1			
	x =	4,75					300 495-555	7,5-7,7 = 2,0			
ca. 56	11,7 4,0 1260	1140-1150 1235-1255 0,3-1,7					493-333	= 2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill foad stop emp. 40°C (104°F)	Rotational speed limital	30 f	iel delivery aracteristics	Starting fi	uel delivery 5	42 Idi	e stop Control rod
rev/min	cm·/1000 strokes 2	changed to 1 rev/min 3	rev/min 4	cm ^{-/} 1000 strokes 5	rev/min 6	cm ² /1000 strokes 7	rev/min 8	travet mm 9
1100	135,0-137,0 (132,0-140,0)	1140-1150*	-	-	100	170,0-190	0 -	-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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WPP 001/4 MB 11,8 b 2

1. Edition

En

PE 6 P 110/720 RS 176

EP/RSV 350-750 P 4/397 R

comparDaimler-Benz engine OM 355

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,75-2,95)

mm (from BDC)

Control rod Iravel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm (2)	cm 1/100 strokes	100 strokes	mm	cm1/100 strokes	mm
2	3	4	2	3	6
12,0	11,3-12,3	0,4			
9,0 15,0 9,0	4,3-5,5 15,5-17,2 2,6-3,6				
1111	12,0 9,0 15,0	12,0 cm //100 strokes 12,0 11,3-12,3 9,0 4,3-5,5 15,0 15,5-17,2	12,0 11,3-12,3 0,4 9,0 4,3-5,5 15,0 15,5-17,2	travel travel travel travel mm 2 cm ¹ /100 strokes 2 cm ¹ /100 strokes 4 cm ¹ /100 strokes 4 cm ¹ /100 strokes 2 cm ¹ /100 strokes 4 cm ¹ /100 strokes 2 cm ¹ /100 strokes 4 cm ¹ /100 strokes 4 cm ¹ /100 strokes 2 cm ¹ /100 strokes 4 cm ¹ /100 strokes 2 cm ¹ /100 str	travel mm 2 cm 1/100 strokes 3 cm 1/100 strokes 4 cm 1/100 strokes mm 2 cm 1/100 strokes 3 cm 1/100 strokes 3 mm 2 cm 1/100 strokes 3 cm 1/100 strokes 3 mm 2 cm 1/100 strokes

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

e control ontrol rod avel	(3)	rated speed Control rod travel		Gontrol-	speed	e rated	Intermediate		r rated speed Control rod travel	egree of
m I	rev/min 10	mm 9	rev/min 8	lever deflection in degrees 7			4 5	mm rev/min	mm 2	leflection of control ever
**		6,0 19,0-21,0		ca. 23 y spring	iliar	: aux	without	16,0 8,6	800	ca. 44
		5,9-6,1 0 - 1,0	350 400	y spring	iliar	<u>a</u> ux	without	a. 11,0 a. 3,8	750 c 765 c	2a, 42
4		19,0-21,0 5,9-6,1	200 350 400	y spring			1	4,0 a. 11,0	800 825 750 c 765 c	

Set idle -speed auxiliary spring at 2.0 mm control-rod travel the numbers denote the sequence of the tests then 1/2 turn back.

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-lead stop	Rotational- speed limitat	6 Rotational- speed limitat 3a Fuel delivery characteristics			luel delivery 5	4a) Idle stop	
Test oil le rev/min 1	cm ¹ /1000 strokes	Note changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min 8	Control root travel mm
730	135,0-138,0	750-760*	780-8	00 = 3,8 mm RW	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

5.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 STE 8,1 a 1

1. Edition

PE 6 P 110 A 721 RS 195 Z

RQV 250-1300 PA 257 DR

supersedas companSteyr

Komb.-Nr. 0 401 856 121

1

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm³/100 strokes	mm 6
1000	12,0	9,8-10,5	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	3,2-4,2 8,2-9,4 13,7-15,3 1,1-2,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
Degree of deflection of control laver	rev/miñ Control rod travel mm 2	Control rod ta travel mm rev/min 28	of control	rev/min 5	Control rod travel mm 4	Degree of deffection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
ca. 50	1340 1400 1450 1500 1570	2,9-9,7 0-5,8	-	-	-	ca. 13	150 250 350 450 510	10,0-11,0 8,0-10,7 4,6-7,8 0,4-3,4	600 950	0,1-0,6 3,8-4,1 5,2-5,6 8,0

Torque control travel a = 0.4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d		Rotational-speed 2b limitation	Fuel delin		Starting Idle	fuel delivery 6	Torque-control (5)		
	np 40°C (104°F) (2)	intermediate speed rev/min 4a		cm³/1000 strokes	switchir rev/min	g point cm³/1000 strokes	tea/win	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
LDA 1300 LDA 1300	0,6 bar 117,0-119,0 (115,0-121,0) 0 bar 113,0-115,0 (111,0-117,0)		LDA 900 700 500	0,6 bar 115,0-118,0 (114,0-119,0) 114,0-118,0 (113,0-119,0) 104,0-110,0 (103,0-111,0)		120,0-140,0		0 0,1-0,2 0,4-0,5	

Chucking values in brackets

* 1 mm less control rod travel than col 2

6.84

A20

BOSCH

D. Adjustment Test for Manifold Pressure Compensator

STE 8,1 a 1

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travet difference
	Gauge pressure : bar	Gauge pressure = bar	mm (1)
PE6PRS195Z + RQVPA257DR	0,30	0,46	Start End

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

ырр 001/4 FIA 13,8 t

2. Edition

Testoil-ISO 4113

PES 6 P 120 A 820 LS 249 Z Komb.-Nr. C 400, 046 103

RQV 300-1000 PA 204/4 P

superse@s 81 comparFiat engine 8217.12.024

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	6 6
1000	10,5+0,1	18,7 - 19,1	0,5(0,9)			
300	5,9-6,1	2,2 - 2,8	0,65(0,9)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control tever	rev/min Control rod travel mm	(LEAG)	\sim	Degree of deflection of control lever	rev/min 5	Control rod travel mm	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	mm 11
max.	1000	15,2-17	,8	-	-	-	ca.14	100	min.9,0	1.50	1,5-1,7 3,6-4,8
·a.59	9,5 4,0 1300	1040-10 1135-11 0 - 1)50 165				300-39	300	5,9-6,1	800 1000	6,4-6,6 7.9
	1.500		,, ,				30				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel deliv high idle s	ery characteristics 50	Starting Idle switching		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm³/1000 strokes	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
1000	187, 0- 191, 0 (184, 0- 194, 0)	1040-1050*	-	-	-	-	•	-

Checking values in brackets

* 1 mm less control rod travel than col 2

WPP 001/4 FIA 13,8 t 1 1. Edition

<u>En</u>

PES 6 P 120 A 820 LS 249-1 Komb.-Nr. 0 402 046 230 RQV 300-750 PA 204

supersedes compañyi at engine 8 217.32.112 147 kW (200 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

troke	1 95 - 2 15)	mm (from BDC)			
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
2	3	4	2	3	6
9,7-9,8	14,9 - 15,3	0,5 (0,9)			
5,9-6,1	1,8 - 2,4	0,4 (0,7)	•		
		İ	ļ		
Í	1	ł			
	Control rod travel mm 2 9,7-9,8	Control rod travel mm cm³/100 strokes 2 3 9,7-9,8 14,9 - 15,3	Control rod travel mm	Control rod travel mm	Control rod travel mm

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediat	e rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	travei	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3		mm 11
max.	800	15,2-17,8	3 -	-	-	ca.11	100	min.7,5	250	0 - 0,5
ca. 53	8,7 4,0 900	770 - 779 790 - 800 0-1,0				(3a)	300 645	5,9-6,1	630 750	2, 4- 2,6 5,8

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-toad d Control-ro	gots to	timitation	Fuel deliv	very characteristics (5a)	idle	. •	Torque-control (5)		
rev/min	np 40°C (104°F) (2) cm³/1000 strokes	rev/min 4a		Ÿ.	switchin rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
<u> </u>	2	3	4	5	6	7	8	9	
700	149,0-153,0 (146,0-155,0	770 - 775*	-	-	-	-	•	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MB 1. Edition

PE 5 P 100 A 720 RS 265 Komb.-Nr. 9 400 087 240 RO 250/1100 PA 269R

Mercedes-Benz Brasil
O M 355-5

1 - 2 - 4 - 5 - 3 je $72^{\circ} \div 0.5^{\circ} (\div 0.75^{\circ})$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Rump Settings

Port closing at prestroke

(2.75 - 2.95)

mm (from BDQRW=9.0 - 12.0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	13,0+0,1	11.9 - 12.1	0,3 (0,6			
250	7,4-7,6	1,7- 2,3	0,3 (0,5	þ		
			i,			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check Control ro travel rev/min 1	1	Full-load s Setting po rev/min 3	-	•	rev/min		Control rod travel	Test spe	cifications 5 Control rod travel mm		Control rod travel
700 15,6-	16,4	700	16,0	12,0 4,0 1350	1125-1145 1195-1230 0-1,0	250	6,0	100 250 385	min. 7,5 5,9-6,1 425=2,0	-	<u>-</u>

Torque-control travel

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	letivery on control leve: ap 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting f Idle spee	uel delivery d
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm
1100	113,5-120,5 (116,5-122,5)	450	450	101,0 - 105,0 (99,0 - 107,0)	100	140,0 - 160,0

Checking values in brackets

7.84

Geschaftsbereich KH. Kundendienst: Kfz-Ausrustung. 4. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Alternagne par Robert Bosch GmbH.

WPP 001/4 PEN 7,0 b 2 2. Edition

En

PE 6 P 110 A 320 RS 260 W

RSV 250-1250 PO/374-2 R

supersedes Volvo-Penta

Komb.-Nr. 0 401 876 272

engine TAMD 70 E

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.75-2.95)

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm1/100 strokes	cm ¹ / 100 strokes	mm	cm ¹ /100 strokes	mm 6
1000	12,1+0,1	14,1-14,3	0,4(0,75)	2	3	
250	6,1-6,3		0,3(0,6)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel	Control rod travel mm rev/min		ed speed	Control- lever deflection in degrees	Lowe rev/min	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800 X =	0,3-1,0 2,0	-	 6	ca. 20	250	5.7 6,1-6,3 20= 2,0	-	-
ca.51	4,0 1	290-1300 390-1420 0,3-1,7		 		1400-7	2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-load stop	6 Rotational- speed limitat		rel delivery paracteristics	Starting f	uel delivery 5	43 Idi	e stop
Test oil to rev/min t	emp 40°C (104°F) cm ¹ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ^{1/} 1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm
LDA 1000	0,9 bar 141,0-143,0 138,0-146,0)	1290-1300*	LDA 700	0 bar 85,0-88,0 (82,0-91,0)	100 250	170,0-210 =20,0 - 21,0 mm RW 11,0-15,0	0 -	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

5

D. Adjustment Test for Manifold Pressure Compensator

PEN 7,0 b 2 -2-

Test at n

500

rev/min decreasing pressure - in bar gauge pressure

300			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
 	Gauge pressure bar	Gauge pressure = bar	mm (1)
PE6PRS 260 W	0,90	0 0 59	12,1-12,2 9,0-9,1 11,3-11,4
+RSVPO/374~2R		0,59 0,30	9,7-9,9
!		<u> </u>	

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Control Action

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 7,0 d 1

1. Edition

PE 6 P 110 A 320 RS 272

RQV 250-1250 PA 235-2 R

Komb.-Nr.0 401 846 298

company: Volvo engine: TD 70 E

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
700	8,7-8,8	9,2-9,4	0,4(0,8)			2,5±0,1
250	6,7-6,9	2,2-2,6	0,3(0,6)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed	Sliding s	Sliding sleeve travel	
deflection	rev/min Controt rod travel mm	Control rod travel mm rev/min 3	(a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3 9	rev/min	mm 11
max.	1250	15,2-17 1290-13		-	-	-	ca.12	250	min.8,2 6,7-6,9 10=2,0	550 900	0,3-0,8 2,6-3,2 4,6-5,0
	4,0 1450	1340-13 0-1,					39)			250	7,5

Torque control travel a = mr

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics (54)	Starting die switchin	, •	Torque- travel	Control Control rod
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1 00 0 strokes	rev/min	cm ³ /1000 strokes	rev/min	U:M
1	2	3	4	5	8	7	8	9
LDA 700	0,7 bar 92,0-94,0 (89,0-97,0)	1290-1300*	LDA 700	0 bar 70,5-73,5 (67,5-76,5)	100	140,0-180,0 (136,0-184,0 =20,0-21,0 mm RW		-

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

VOL 7,0 d 1

- 2 -

Test	at	n	

500

rev/min decreasing pressure - in bar gauge pressure

500			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 272 +RQV PA 235-2 R	0,70	0 0,31 0,23	8,7-8,8 7,8-7,9 8,5-8,6 7,9-8,1

Notes

(1) when n

rev/min and gauge pressure =

bar (# maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 WPP 001/4 MB 11,8h and Governors

3. Edition

PE 6 P 100 A 720 RS 279

POV 300-1100 PA 550

supersed 8.83 companyDaimler Benz OM 355 engine: 177 kW (241 PS)

Testoil-ISO 4113 Komb.-Nr. 0 401 846 442 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

F	Port closing at pres	troke ((2,75-2,95) mm (from BDC) PM= 9,0 - 12,0 mm							
i	Rotational speed Control rod travel rev/min mm 1 2		Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6			
	1100	12,7	11,7 - 11,9	0,3(0,5)			_			
	300	+0,1 8,0-8,2	1,5 - 2,0	0,3(0,5)						

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediat	e rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
	rev/min Control rod travel mm 2	Control rod travel mm rev/min (2)	of control	rev/min	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	(1) mm 11
max.	1100	15,2-17,8	-	-	-	ca.12	100	min.9,5	300 450	1,4-1,5 2,7-3,0
ca. 65	11,7	1140-1150 1235-126	5				300	·8,0-8,2	1150	8,7
	1350	0 - 1,0				330-430 39				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 limitation stermediate speed	Fuel delivingh idle s	rery characteristics (5a)	Starting Idle switchir	. •	Torque- travel	control (5) Control rod travel	
rev/min cm³/1000 strokes		rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min cm³/1000 strokes		rev/min		
1	2	3	4	5	6	7	88	•	
1100	117,0-119,0 (115,0-121,0)		•	-	100	140,0-160,0 [136,0-164,0) -	-	
					100	-220 (80 - 240)			

Chocking values in brackets

1 mm less control rod travel than col. 2

WPP 001/4 ROL 16,2 b

1. Edition

PE 8 P 110 A 920/4 RS 290 R

RQV 350/575-750 PA 273 R

Komb.-Nr. 0 401 848 044

1-6-2-5-8-3-7-4 je $45^{\circ} \div 0.5^{\circ} (\div 0.75^{\circ})$

supersedes.

company Rolls Royce

engine: C8T

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

oil-iSO 4113

A. Fuel Injection Pump Settings

Port closing at pres Rotational speed rev/min	Control rod travel	(2,45-2,65) Fuel delivery cm³/100 strokes	Difference cm³/ 100 strokes	RW=9, 0- Control rod travel mm	Fuel delivery cm³/100 strokes	Spring pre-tensioning (forque-control valve) mm
700	13,7+0,1	17,6-17,9	0,4(0,75)			
350	7,0-7,2	1,8-2,2	0,3(0,6)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed			Intermediate	rated spe	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm ①
1	2	3	_	4	5	6	7	8	9	10	11
ca. 68	12,7 4,0 950	750-755 790-800 0-1,0		-	-	-	ca. 15	350	min. 8,5 7,0-7,2 540=2,0	320 400 500 650 750	0,5-1,7 1,9-2,1 4,6-5,2 8,3
							<u> 3</u>				

Torque control travel a =

നന

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rol	stop	limitation	Fuel deli-	very characteristics 5a	Starting Idle switching	. •	Torque- travel	control (5)
rest oil ten	np. 40°C (104°F) (2) c/h ³ /1000 strokes	rev/min	.l	cm ³ /1000 strokes	rev/min		rev/min	travel mm
1	2	3	4	5	6	7	8	9
700	176,0-179,0 (173,5-181,5)	750-755 *	-	-	100	210,0-230,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MAN 11,1 s

2. Edition

PES 6 P 110 A 720 LS 295

ROV 250-1100 PA 373 DR

company MAN

Komb.-Nr. 0 402 046 170

engine. D 2566

supersede 10.83

D 2566 MT 206 kW/2200 min

MAN-Nr. 1-7961

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	12,1+0,1	14,5-14,8	0,4(0,8)			
250	6,8-7,0	1,2-1,7	0,45(0,75	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated t	speed			Intermediate	rated sp	eed	Lower rated	speed	Sliding sleeve travel		
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 3	(a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control tever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max. ca.67	11,1	15,2-17 1140-119 1280-13 0 - 1		-	-	-	ca. 13	100 250 520-	min.8,5 6,8-7,0 580=2,0	500	0,6-0,8 3,9-4,1 5,5-5,7 8,1

Torque control travel a = 0,7 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter	d stop	Rotational-speed 2b limitation intermediate speed	Fuel delin		Starting Idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1 000 s trokes	rev/min 6	cm ³ /1000 strokes 7	rev/min &	travel mm
LDA 1100 LDA 700	0,7 bar 145,0-148,0 (142,5-150,5) 0,7 bar 157,0-161,0 (154,0-164,0)		LDA 500 LDA 500	0,2 bar 123,0-127,0 (120,0-130,0 0 bar 110,0-113,0 (107,0-116,0		215,0-235,0 (211,0-239,0)	700	12,1+0, 12,8+0, 12,3+0,

Checking values in brackets

* 1 mm less control rod travel than col 2

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,1 s -2-

Test at n

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 295 + RQVPA 373 DR	0,50	0 0,20 0,32	12,8 - 12,9 10,9 - 11,0 11,5 - 11,6 12,2 - 12,4

Notes

(1) when n is

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 MAN 11,1 s 1 2. Edition

En

PES 6 P 110 A 720 LS 295

ROV 250-1100 PA 421 DR

Komb.-Nr. 0 402 046 174

supersedei0.83

company: MAN

engine D 2566 MTSF

206 kW/2200 min

MAN-Nr. 1-7968

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,1+0,1	14,5-14,8	0,4(0,8)			
250	6,9-7,1	1,2-1,7	0,45(0,75			7
				}		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed		Lower rated	speed	•	Sliding s	leave travel
deflection of control	rev/min Control rod travel mm	rev/min	(18) (28)	Degree of deflection of control lever	rev/min	Control travel	rod •	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
max.	1100	3 15,2-17	,8	-	5	-		ca. 16	100	min.8,5	200	0,6-0,8
ca.68		1140-115							250 520-	6,9-7,1 580=2,0	800	3,9-4,1 5,5-5,7
	4,0 1400	1245-127 0 - 1	75 ,0							·	100	8,1
								3a)				

Torque control travei a = 0,7 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Rotational-speed 20 limitation intermediate speed	Fuel delin high idle s	very characteristics (5a)	Starting Idle switchir		Torque-	Control cod
rev/min	cm³/1000 strokes	rev/min 49	rev/min 4	cm ³ /1000 strokes	rev/min	cin ³ /1000 strokes 7	rev/min 8	travel mm 9
LDA 1100 LDA 700	0,7 bar 145,0-148,0 (142,5-150,5) 0,7 bar 157,0-161,0 (154,0-164,0)		LDA 500 LDA 500	0,2 bar 123,0-127,0 (120,0-130,0 0 bar 110,0-113,0 (107,0-116,0		215,0-235,0 (211,0-239,0	700	12,1+0, 12,8+0, 12,3+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,1 s 1 -2-

Testatn -

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 295 + RQVPA 421 DR	0,50	0 0,20 0,32	12,8 -12,9 10,9 - 11,0 11,5 - 11,6 12,2 - 12,4

Notes

(1) when n

rev/min and gauge pressure =

bar (maximum full-load control rod travel)

WPP 001/4 MAN 11,1 1 8 2 Edition

PES 6 P 110 A 720 LS 295

Komb.-Nr. 0 402 046 173

supersedes 10.83 company: MAN

D 2566 MTSF

206 kW/2200 min⁻¹ MAN-Nr. 1-7963

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDCZy1. 6; RW = 9,0 - 12,0 mm

	`					
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	12,1+0,1	14,5 - 14,8	0,4(0,8)			
250	6,8-7,0	1,2 - 1,7	p,45(0,75			
					1	

RQ 250/1100 PA 422 DR

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load : Setting po	-	_	cifications (2	Idle spe	ed regula		cifications (5)	Torque	\sim
rev/min	Control rod travel	rev/min	Control rod travel rmm	Cantral red travel rnm 5	rev/min	rev/min	Control red travel		Control rod travel mm	rev/min 11	Control rod travel mm
600 V H	19,2-20 _. 8 = max. 46	600	20,0	11,1 4,0 1350		0	6,9	100 250 370-	min.8,5 6,8-7,0 410=2,0	1000 800	12,1-12,2 12,3-12,5 12,6-12,8 12,8-12,9
	control travel	nsion a =	0,3	mm		peed regul		145-1	160 min 1		1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting f Idle spee	uel delivery ed Control
rev/min 1	cm³/~1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes	rev/min	red travel cm ³ /1000 strokes:/ mm
LDA 1100 LDA 700	0,7 bar 145,0-148,0 (142,5-150,5) 0,7 bar 157,0-161,0 (154,0-164,0)	-	LDA 500 LDA 500	0,2 bar 123,0-127,0 (120,0-130,0) 0 bar 110,0-113,0 (107,0-116,0)	100	215,0-235,0 (211,0-239,0)

Checking values in brackets

7.84

B11 BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. c. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure - bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 295 + RQPA 422 DR	0,50	0 0,20 0,32	12,8 - 12,9 10,9 - 11,0 11,5 - 11,6 12,2 - 12,4

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

MAN 11,1 1 8

-2-

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 BET 12,0 a 1

1. Edition

En

PE 6 P 110 A 320 RS 350

RSV 300-1100 P 1/815 DR

Komb.-Nr. 0 401 876 210

superseds Berliet
company MDS 063540 T
engine 256 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

1,3-1,4 (1,25-1,45) mm (from BDC)Zy1. 3

Rotational speed	Control rod travel	Fuel delivery	Difference cm ⁻ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ³ /100 strokes	100 strokes	mm 2	cm 1/100 strokes	mm 6
1100	11,7+0,1	14,5-14,8	0,4(0,8)			
300	6,8-7,0	0,7-1,5	0,4(0,7)			
,						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Interme	date ra	led speed	Lower rated speed 3 Torque control					
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min	Control rod travel mm	
ca. 60	1085 1140 1180	16,0 10,2 5,0	with	out a	uxilia	ca. 27 y spring	300 100 300	6,4 min.19,0 6,8-7,0	1100 900 650	11,7-11,8 12,9-13,1 13,3-13,4	
29	1145 1200 1300	10,7 ca. 4,0 0,3-1,7	with	auxi	liary	pring		80=2,0 0-1,0		10,0*10,1	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

169	nil load stop emp 40°C (104°F)	Rotational speed limital Note Fuel delivery characteristics		•	Starting f	uel delivery 5	da Idle stop		
rev/min	cm /1000 strokes	changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9	
LDA 1100	0,7 bar 145,0-147,5 (142,0-150,5)	1140-1150*	LDA 650	0,7 bar 174,0-179,0 (171,0-182,0)	100	160,0-180	,0 300	6,9	
LDA 900	0,7 bar 165,0-171,5 (162,0-174,5)		LDA 350	0 bar 109,0-113,0 (106,0-116,0)					

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung c. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Alternagne par Robert Bosch GmbH.

BET 12,0 a 1 - 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 350 + RSV P1/815 DR	0,68	0,42 0,22 0	13,4-13,5 12,6-12,7 11,6-11,9 11,1-11,2

Notes

(1) when n 🧸

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 BET 12,0 b

1. Edition

PE 6 P 110 A 320 RS 350

RSV 300-1100 P 1/816 DR

Komb.-Nr. 0 401 876 211

Berliet MDS 063540 206 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(1,25-1,45)

mm (from BDC; RW=9,0-12,0 mm - Zyl. 3

Rotalional speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
ev/min	mm 2	cm 7100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm //100 strokes	mm 6
1100	12,7+0,1	16,7-16,9	0,4 (0,75)			
300	6,8-7,0	0,9-1,7	0,45(0,75)			
						1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate ra	ted speed	Control- lever deflection in degrees 7		raled speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,5	-	_		ca. 24	300 300 480-54	6,4 6,8-7,0 0-2,0	1100 1000 700	12,7-12,8 12,9-13,1 13,5-13,7
ca. 59	11,7 4,0 1300	1140-1150 1200-1230 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop emp=40°C (104°F)	Rotational- speed limital	.34	nel delivery anaracteristics	Starting f	uel delivery 5	ldle stop Control rod	
rev/min	cm ¹ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
LDA 1100	0,7 bar 166,5-168,5 (164,0-171,0)	1140-1150*	LDA 650 LDA 350	0,7 bar 180,0-185,0 (177,0-188,0) 0 bar 109,0-113,0 (106,5-115,5)	100	160,0-180 (156,0-184		6,9

Checking values in brackets

* 1 mm less control rod travel than col 2

BET 12,0 b

2 -

Tost	21	n	+

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 350 +RSV P1/816 DR	0,70	0 0,38 0,22	13,5-13,7 10,7-10,8 ~ 12,8 12,9 11,4-11,7

Notes

(1) when n

rev/min and gauge pressure :

bar (= maximum full-load control rod travel)

B16

2

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4A4B11, 4b

5. Edition

Testoil-ISO 4113

PES & P 100 A 820 LS 3517. ..LS 3514 RQ 300/1100 PA327R (1) PA327R (2) supersedes10.83 company.Daimler-Benz engine: OM 407

147kW (200PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.13)

mm (from BDC)

Zy1. 6

Rotational speed rev/min	Control rod travel mm	Fuel delivery 1 cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery 2 cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	1i.6-11.	9 10,2 - 10,4	0,3(0,6)	11,7-11,	8 9,9 - 10,1	
300	8,0-8,2	0,6-1,2	0,3(0,5)	7,5-7,7	0,5 - 1,1	
			:			
<u> </u>	1			1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

327R mit Z

Checking PRG che		Full-load s Setting po				Idle spec	coint Control		cifications 5	Torque o	control Control rod
rev/min 1	travel	rev/min 3		nd travel mm 5	rev/min 6	rev/min 7	red travel rnm 8	rev/min 9	travel mm 10	rev/min 11	
500	13,8-14,6	500	14,2		1145-1160 1200-1230 0 - 1,0	300	7,6	100 300 370-	min.9,6 7,5-7,7 110=2,0	-	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation:

..1145-1160 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever on 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting for	Control
rev/min	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes / mm 7
"Z" 1100	102,0 - 104,0 (100,0 - 106,0)	500	-	-	100	145,0-165,0 (141,0-169,0)

Checking values in brackets

Checkin PRG che	g of slider	Full-load : Setting po	•	•	cifications (4)	ldle spe	•		cifications (5)	Torque d	control (3)
rev/min	Control rod travel mm 2	rev/min 3	Control rod travel mm	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	1	Control rod travel mm	rev/min	Control rod travel mm 12
500	13,8-14,6	500	14,2	10,7 4,0 1350			7,6	300	min.9,6 7,5-7,7 410=2,0	-	-

Torque-control travel on flyweight assembly dimension a

Stated regulation A1145-1160 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104°F)	Control rod stop 3a	Fuel defiv	ery characteristics	Starting I	fuel delivery
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /~1000 strokes	rev/min	cm ³ /1000 strokes / mm
"y" 1100	99,0 - 101,0 (97,0 - 103,0)	. 500	-	-	100	130,0-150,0 (126,0-154,0)
					İ	

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

Checkin	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			-	cifications (4)	Idle speed regulation Setting point Test specifications (5)				Torque control		
1	Control rod travel mm		rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod (
			•									
								l		./.		

Torque-control travel on flyweight assembly dimension a -

mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever pp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting f			
rev/min 1	cm ³ /-1000 strokes 2	rev/min	rev/min	cm ³ /-1000 strokes	rev/min	Control rod travel cm ³ /1000 strokes / mm		
						,		

En Checking values in brackets

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 8,8 c 1

2. Edition

_Eo

PE 6 P 120 A 321 RS 359-1 RQV 275-1200 PA 648 Komb.-Nr. 0 401 856 154 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes 10.83
company: RVI
engine MID 06 20 30

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,45–3,65) mm (from BDC)

Rotational analytic Control of Fuel delivery Difference

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,7+0,		0,5(0,9)			
275	5,6-5,	B 1,1-1,7	0,8(1,2)			
				<u> </u>	<u> </u>	<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermed	liate rated sp	eed	Lower rated	speed	•	Stiding sleeve travel	
deflection of control	rev/min Control rod travel mm	mm ·	Degree of deflection of control lever	n	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	0
lever 1	2	3	4	5	6	7	8	9	10	11
max.	1230	15,2-17	,8 -	-	-	ca. 10	200 275	min.8,2 5,6-5,8	275 450	1,3-1,4
ca. 65	9,7 4,0 1450	1245-12 1335-13 0-1,	65			275-36		5,0-5,6	800 1200	8,3-3,9 5,7-5,9 8,3
						39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Ilmitation intermediate speed	high idle s	rery characteristics (5a)	Starting Idle switching	, •	Torque-control 5	
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1200	127,0-129,0 (124,0-132,0		-	•	100	155,0-175,0 (151,0-179,0		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

B19

Testol/180 4113

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 PEN 7,0 k

1. Edition

PE 6 P 110 A 320 RS 367 Z Komb.-Nr. 0 401 846 456

RQV 250-1000 PA 394

supersedes
compan¥01vo-Penta
engine MD 70 C-C

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min 1	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	8,9-9,0	7,0-7,2	0,4(0,75)			2,5 ± 0,1
250	5,3-5,5	1,6-2,0	0,3(0,6)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod (1a) travel mm rev/min (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11	
max.	1050	15,2-17,8	ì	-	-	ca. 10	100 250	min.6,8 5,3-5,5		0,7-0,9 3,2-3,7	
ca. 66	7,9 4,0 1250	1050-1060 1110-1130 0-1,0				250-400		, 0,0 0,0		5,2-5,5	
						39					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed 2b timitation intermediate speed	Fuel deliv	rery characteristics 5a	Starting Idle switchir	. •	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 900	0,7 bar 70,0-72,0 (67,0-75,0)	1050-1060*	-	-	100	165,0-200,0 (161,0-204,0)		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

2

Test Specifications 40 Fuel Injection Pumps ② WPP 001/4 STE 10,0 b and Governors

7. Edition

PE 6 P 110 A 721 RS 369

RO 300/1300 PA 412 DR

supersede7.83 company Steyr engine WD 615.60

Komb.-Nr. 0 401 856 142

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

		2,70-2,90				
Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (forque-control valve)
1	2	3	4	2	3	6
1300	12,5+0,1	11,7-11,9	0,4(0,75)			
250	9,0-9,2	1,8-2,4	0,4(0,7)		ļ	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load :	speed re	-			Idle spec	•			Torque o	_
PRG che rev/min 1	Control rod	Setting po rev/min 3	Control red travel rnm 4	Test sper Control rad travel rnm 5	rev/min	(4)	Setting p rev/min 7	Control rod travel	Ì	cifications (5) Control rod travel mm	rev/min	Control rod travel mm
550	15,6-16,4	550	16,0	11,5 4,0 1550	1405-1			6,0		5,9-6,1	700 900	12,5-12,6 12,8-12,9 12,6-12,8 12,6-12,7
forque-c	ontrol travel		0,2						3 45- 13	360 min-1		1 mm less contro

on flyweight assembly dimension a = C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics	Starting fuel delivery Idle speed		
fev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6_	red travel cm ³ /1000 strokes:// mm 7	
LDA 1300	0,7 bar 117,0-119,0 (114,0-122,0)	-	LDA 700	0,7 bar 107,0-111,0 (104,0-114,0)	100	115,0-135,0	
			LDA	0 bar 100,0-102,0 (97,0-105,0)		·	

Checking values in brackets

5.84

rod travel

STE 10,0 b

- 2 -

Toct	21	n	•

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure bar	Gauge pressure = bar	mm (1)
PE 6P RS 369 +RQ PA 412 DR	0,70	0 0,31 0,27	12,8-12,9 12,5-12,6 12,7-12,8 12,6-12,7

Notes

rev/min and gauge pressure =

⁻¹⁾ when h

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 STE 10,0 b 1 1. Edition

PE 6 P 110 A 721 RS 369 Komb.-Nr. 0 401 856 143 ROV 250-1300 PA 413 DR

supersedes

company Steyr

WDWD 615,60

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	12,6+0,	1 11,5-11,7	0,4(0,75)			
250	9,3-9,5	1,8-2,4	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	speed			Intermediate	rated sp	eed		Lower	ated	speed	•	Stiding s	Stiding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	(3) (28)	Degree of deflection of control lever	rev/min 5	Control rod travel mm (4	9	Degree deflected of control lever	on i	rev/min 8	Control rod travel mm 3		1	
max.		15,2-17		-	-	-		ca. 1	15	100 250	min10,5	560	0,6-0,8 3,4-4,1	
ca. 47	11,6 4,0 1550	1340-13 1450-14 0 - 1	80							420-4	80= 2,0	930 1300	5,6-6,0 8,3	
								39						

Torque control travel a = 0.4

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di Control-roi Test oil ten rev/min		Rotational-speed (2b) fimitation intermediate speed rev/min (4a)	high idle s	very characteristics 5e peed 5b cm ³ /1000 strokes	Starting fuel delivery 6 Idle switching point rev/min cm3/1000 strokes		Torque- travel	Control cod travel mm
1	2	3	4	5	6	7	8	9
LDA 1300	0,7 bar 115,0-117,0 (112,0-120,0		LDA 700 LDA 700	0,7 bar 108,0-111, (105,0-114, 0 bar 102,0-104,0 (99,0-107,0	()	120,0-130,0	700 1000	12,6+0, 13,0+0, 12,9+0, 12,7+0,

Checking values in brackets

* 1 mm less control rod travel than col 2

STE 10,0 b 1 - 2 -

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure bar	Gauge pressure bar	mm (1)
PE6PRS 369 +RUV PA 413 DR	0,70	0 0,35 0,33	13,0-13,1 12,7-12,8 12,9-13,0 12,8-12,9

Notes

(1) when n

rev/min and gauge pressure

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 11,8 i
4. Edition

En

Testoil-ISO 4113

PE 6 P 110 A 720 RS 371 RQV 300-1100 PA 568 Komb.-Nr. 0 401 846 450 1 - 5 - 3 - 6 - 2 - 4 0 -60 -120-180-240-300 $\pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

supersede2.82
company.Daimler Benz
0M 355 A
engine: 206 kW (280 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at pres	stroke	(2,75-2,95) 2.80-2.90	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1100	11,7+0,1	16,0 - 16,2	0,4(0,8)			
300	6,1-6,3	1,3- 1,9	0,4(0,7)			
600		c, sp. 4 u.5	0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
deflection of control	rev/min Control rod travel mm	Control rod travel mm rev/min (28	of control	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm (1)
lever 1	2	3	4	5	6	7	8	9	10	11
max.	1100	15,2-17,8	•	-	-	ca. 16	100 300	min. 8,0 6,2-6,4	540	1,0-2,0 4,4-4,6 5,9-6,2 8,4
ca. 66		1140-1150 1215-1245 0 - 1,5				275-330 ③			1100	0,4

Torque control travel a = ___ mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a peed 5b	Starting fuel delivery (6) ldle . ewitching point		Torque- travel	control 5 Control rod travel
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min 6	cm ³ /1000 strokes	rev/min 8	
LDA 1100	0,7 bar 160,0-162,0 (157,0-165,0)	1140-1150*	LDA 600	0,7 bar 155,0-159,0 (152,0-162,0)	100	140,0-160,0 136,0-164,0	-	•
			LDA 500	0 bar 134,0-136,0 (131,0-139,0)		220 (80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

-2-

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

MB 11.8i

Testoil-ISO 4113

Pump/governor	Setting	Measurement		Control rod travel	diminution , difference
	Gauge pressure - ba	Gauge pressure =	bar	mm (1)	
371 with 568	0,7 bar	0,39	•	11,7 - 11,5 -	11,8 11,6
		0,35		11,2 -	11,3
		0		11,0 -	11,1

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 i
5. Edition

En

PE 6 P 110 A 320 RS 372 Komb.-Nr. 0 401 876 235 RSV 250-1100 P 5/458 R

supersed19.82 companyDAF engine DKTD 1160

Note VDT-I-420/114

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,8-2,9

Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm / 100 strokes	100 strokes	mm	cm 1/100 strokes	mm
1	2	3	4	2	3	6
850	12,0+0,1	13,6-13,9	0,4 (0,75)			
250	6,6-5,8	0,7-1,2	0,45(0,75)		ŕ	
				Ì	}	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	1) Upper rated speed rev/min			Intermediate rated speed			Lower	rated speed	3 Torque control	
Degree of deflection	Control rod travel	Control rod travel			1	Control- lever		Control rod travel		Control rod travel
of control	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	•	•	ca. 21	250	6,2	400	12,2-12,3
10050	x = 3	5					250 640-700	6,6-6,8 = 2,0	300	12,4-12,9
ca. 51	11,0 4,0	1140-1150 1275-1305								
29	1425	0,3-1,7					Ì			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		Rotational- speed limitat	11.37	uel delivery naractenstics	Starting fuel delivery 5			4a Idle stop		
Test oil to rev/min t	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ^{3/} 1000 strokes 5	vev/min	cm ³ /1000 strokes 7	rev/min 8	Control root travel mm 9		
LDA 850	0,7 bar 135,5-138,5 (133,0-141,0)	1140-1150 *	LDA 600	0 bar 126,0-129,0 (123,5-131,5)	100	244,0-285 (240,0-28) = 19,5 - 21,0 mm RW		6,7		

Checking values in brackets

* 1 mm less control rod travel than col 2

5.84

BOSCH

Geschaftsbereich KH. Kundendienst: Kfz-Ausrustung v. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgärt 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

DAF 11,6 i

. 2 -

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 372 + RSV P5/458 R	0,70	0 0,30 0,26	12,0-12,1 11,4-11,5 11,8-11,9 11,5-11,7

Notes

(1) when n

rev/min and gauge pressure =

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 11,6 k

5. Edition

En

RSV 250-1100 P5/458R

supersedes 10.82 company: DAF

PE 6 P 120 A 320 RS 372 Komb.-Nr. 0 401 876 229

engine: **DKS 1160**

Note VDT-I-420/114

235 kW (320 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke	2,8 - 2,9 (2,75-2,95)	mm (from BDC)
	- A - 4 - 11	Difference

Rotational speed		Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
850	10,9+0,1	19,1 - 19,5	0,5 (0,9			
250	6,2-6,4	1,1 - 1,5	0,65(0,9	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deliection of control lever		Control rod travel mm	Intermediate Degree of deflection of control lever	rev/min	ed Control rod travel mm 6	Degree of deflection of control lever	rated spe rev/min 8	ed Control rod travel mm	3 Tor	que control Control rod travel mm
loose	800	0,3 - 1,0	-	-	-	ca. 24	250	5,8	400 300	11,1+0, 11,3+0,
10036	x =	5,0					250 620-	6,2-6,4 580 = 2,0		11,310,
€a. 54	9,9 4,0 1425	1140-1150 1260-1290 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop		6 Rotational- speed limitat.		el delivery practeristics	Starting Idle	fuel delivery	5e Idle stop	
Test oil tem rev/min 1	1 .	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 850	0,7 bar 191,0-195,0 (188,0-198,0)	1140-1150*	LDA 600	0 bar 135,0-137,0 (132,0-140,0)	100	315,0-355,0 (311,0-359, = 19,5 - 21,0 mm Rk	o)	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

DAF 11,6 k

-2-

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) _
PE6P120RS 372 with P5/458R	0,36	0,70	10,6 - 10,7 10,9 - 11,0
		0	9,8 - 9,9
	·	0,28	10,0 - 10,2

Notes

Testoil-ISO 4113

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

En

CG.

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11,6 i 9

1. Edition

PE 6 P 120 A 320 RS 372-1 Komb.-Nr. 0 401 846 464

RO 250/1100 PA 417 R

supersedes

company: DAF

engine: DKS 1160 235 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.75-2.95)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
850	10,9+0,1	19,3-19,7	0,5(0,9)			
250	6,2-6,4	1,1-1,5	0,65(0,95	þ		
230	0,2 0,1					
						}
	1					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load s	•	-	cifications (4)	idle spec	-		cifications (5)	Torque	control 3
rev/min 1	Control rod travel mm 2	rev/min	Control rod travel rmm 4	Control red travel rnm 5	rev/min 6		Centrol rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod () travel
700	15,6-16,4	700	16,0	9,9 4,0 1350	1145-1160 1210-1240 0-1,0		6,3	100 250 445-	min.7,4 6,2-6,4 485 = 2,0		10,9-11,0 10,8-11,0
income.c	control travel		0				1	145-1	160 min ⁻¹		1 mm less contr

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop 3a	Fuel deliv	rery characteristics	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes / mm 7	
LDA 850	0,7 bar 193,0-197,0 (190,0-200,0)	-	LDA 600	0 bar 133,5-137,5 (130,5-140,5)	100	320,0-360,0 (316,0-364,0) = 19,5-21,0 mm RW	

Checking values in brackets

DAF 11,6 i 9

-2-

Test	at	n

600

rev/min decreasing pressure - in bar gauge pressure

000			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 PRS 372-1 + RQPA 417 R	0,70	0 0,30 0,26	10,9-11,0 9,8-9,9 10,6-10,7 10,0-10,4

Notes

(1) when n

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6 i 8
3. Edition

<u>En</u>

PE 6 P 110 A 320 RS 372-1

Komb.-Nr. 0 401 846 463

RQ 250/1100 PA 417-1

RQ 250/1100 PA 417

supersedes 3.83

company: DAF DKTD 1160

engine: 191 kW (260 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8-2,9
Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,0+0,	13,7-14,0	0,4(0,75)			
250	6,6-6,	B 0,7 -1 ,1	0,45(0,75)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	ck Control rod travel		int Control rad travel	Test spec Central red travel	cifications (4) rev/min	Idle spec Setting p rev/min 7	Central red travel		cifications 5 Control rod	forque of rev/min	Control rod (3)
700	15,6-16,4	700	16,0		1145-1160 1220-1250 0 - 1,0	250	6,7	250	min. 7,8 6,6-6,8 00 = 2,0	850 1100	12,0-12,1 11,9-12,1

Torque-control travel on flyweight assembly dimension a =

n Speed regulation: At

1145-1160 min⁻

1 mm less control rod trave!

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed Control		
rev/min	cm³/-1000 strokes	rey/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm 7	
LDA 850	0,7 bar 136,5-139,5 (134,0-142,0)	-	LDA 600	0 bar 127,5-130,5 (125,0-133,0)	100	245,0-285,0 (241,0-289,0) = 19,5-21,0 mm RW	

Checking values in brackets

DAF 11,6 i 8

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

	Pump/governor	Setting	Measurement	diminution Control rod travel- difference
3		Gauge pressure - bar	Gauge pressure = bar	mm (1) .
Testoil-ISO 4113	PE 6 PRS372-1 +PA17-1 /PA 417	0,70	0 0,30 0,26	12,0 - 12,1 11,4 - 11,5 11,8 - 11,9 11,5 - 11,7

Notes:

(1) when n =

rev/min and gauge pressure =

estoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 DAF 11.6 k 5 1. Edition

PE6P120A 320 RS 372-1

RO 250/1000 PA 417-3

supersedes

DAF company

engine

DKSB 215 kW

Komb-Nr. 0 401 846 503

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,8-2,9 Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed	1	Fuel delivery cm ³ /100 strokes	Difference čm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850 250	11,2+0,		0,5(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	g of slider ck Control rod	Full-load : Setting po			cifications (4)	Idle spec Setting p	-		cifications 5	Torque d	Control rod
rev/min	travel	rev/min	red travel mm	red travel mm	rev/min 6	rev/min 7	rod travel	rev/min 9	travel mm 10	rev/min 11	travel mm 12
700	15,6-16,4	700	16,0		1035-1050 1095-1125 0-1,0		6,3	250	min.7,4 6,2-6,4 85=2,0	850 1000	11,4-11,5 11,3-11,5

Torque-control travel on flyweight assembly dimension a =

1035-1050 min Speed regulation: At

t mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104°F)	Control rod stop 3a	ery characteristics	Starting fuel delivery 6		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes	rev/min 6	cm ³ /1000 strokes:/ mm
LDA 850	0,7 bar 179,0-181,0 (176,0-184,0)	-	LDA 600	0 bar 135,5-137,5 (132,5-140,5)	100	305,0-345,0 (301,0-349,0)
					250	6,2-6,4 mm RW

Checking values in brackets

DAF 11,6k5 -2-

Testatn =	rev/min decreasing pressure – in bar gauge pressure
	Increasing

600 Pump/governor	Setting	Measurement	diminution Control rod travel-
			difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6PRS 372-1	0,70		11,2-11,3
+RQPA 417-3		0	10,0-10,1
·		0,33	10,9-11,0
		0,27	10,2-10,4
			**

Notes

(1) when n

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6k3
3. Edition

Er

PE 6 P 110 A 320 RS 372-1 Komb.-Nr. O 401 876 254 RSV 250-1100 P5/458 R P5/458-1 supersedes 7.83
company DAF

DKTD 1160 engine 191 kW (260 PS)

Note VDT-I-420/114

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

7.7

2,8-2,9 (2,75-2,95)

mm (from BDC)

Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm 2	cm1/100 strokes	cm ¹ / 100 strokes	mm	cm /100 strokes	mm 6
12.0+0.1	13.7 - 14.0	0.4 (0.75)	2	3	- Č
		4			
0,0 0,0	","				
	Ì				
	travel	travel mm 2 cm 1/100 strokes 3 12,0+0,1 13,7 - 14,0	travel mm 2 cm 1/100 strokes 3 cm 1/100 strokes 4 12,0+0,1 13,7 - 14,0 0,4 (0,75)	travel mm 2 cm'/100 strokes 2 12,0+0,1 13,7 - 14,0 0,4 (0,75)	travel mm 2 cm*/100 strokes 3 12,0+0,1 13,7 - 14,0 0,4 (0,75)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

14 7 7	r rated speed Control rod travel mm		Interme	diate rate	d speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	ほっょ	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,25	-	-	•	ca. 21	250 250	6,2 6,6-6,8	400 300	12,2 +0,1 12,4+0,5
ca. 51	11,0 4,0 1425	1140-1150 1275-130 0,3 - 1,3	1				640-700	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(9)	ill-load stop	6 Rotational- speed limitat	uel delivery naracteristics	Starting f	4a) Idle stop			
Test oil te rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min	travel mm 9
LDA 850	0,7 bar 137,0-1 40,0 134,5-1 42,5)	1140-1150*	LDA 600	0 bar 127,5-130,5 (124,5-133,5)	100	245,0-285 241,0-289 = 19,5 - 21,0 mm RW		6,7

Checking values in brackets

* 1 mm less control rod travel than col 2

5.84

BOSCH

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DAF 11,6 k 3

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 372-1 + P5/458 / P5/458-1	0,30	0,70 0 0,26	11,8 - 11,9 12,0 - 12,1 11,4 - 11,5 11,5 - 11,7

Testoil-ISO 4113

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 DAF 11.6 k 4 2. Edition

PE 6 P 120 A 320 RS 372-1

RSV 250-1100 P5/458 R

11.82 supersedes DAF

Komb.-Nr. 0 401 876 255

company **DKS 1160** engine 235 kW

Note VDT-I-420/114

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,8-2,9 Port closing at prestroke (2,75-2,95) mm

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm*/100 strokes 3	mm 6
850	10,9+0,1	19,3-19,7	0,5 (0,9)		·	
250	6,2-6,4	1,1-1,5	0,65(0,95	D		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	er rated speed		Interme	d:ate rated	speed	(4)		rated speed	IL 9 /	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	travel mm		travel mm
loose	800 X =	0,3-1,0 5,0	-	-	-	ca. 24	250 250	5,8 6,2-6,4	400 300	11,1+0,1 11,3+0,5
ca.54	9.9 4.0 1425	1140-1150 1260-1290 0,3-1,7					620-680	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	emp 40°C (104 F)	Rotational- speed limitat		iel delivery paracteristics 1	Starting f	uel delivery 5	Idle stop		
rest oil te revimin 1	cm ¹ /1000 strokes	changed to 1 rev/min 3	rev/min 4	cm//1000 strokes 5	rev/min	cm ¹ /1000 strokes 7	rev/min 8	travel mm 9	
850	0,7 bar 193,0-197,0 190,0-200,0)	1140-1150*	LDA 600	0 bar 133,5-137,5 (130,0-141,0)	100	320,0-360 (316,0-364 = 19,5 - 21,0 mm RW	0 250 ,0)	6,3	

Checking values in brackets

* 1 mm less control rod travel than col 2

5.84



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DAF 11,6 k 4

Test at n =

600

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = ba	Gauge pressure = bar	mm (1) .
PE6PRS372-1	0,36		10,6 - 10,7
+P5/458R		0,70	10,9 - 11,0
		0	9,8 - 9,9
† 		0,28	10,0 - 10,4
			<u></u>

Notes

(1) when n

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 DAF 11,6 k 2 4. Edition

PE 6 P 120 A 320 RS 372-1 Y

RSV 250-1100 P5/458 R

supersedes 2.84 DAF company

Note VDT-I-420/114

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers **DKX 1160** 243 kW

Komb.-Nr. 0 401 876 261

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8-2,9 (2.75-2.95)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes	cm ⁻¹ / 100 strokes	mm	cm/100 strokes	mm 6
850	11,4+0,1	18,3-18,6	0,5 (0,9)			
250	6,4-6,6	1,1-1,5	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	r rated speed	rev/min	Interme	diate rated	t speed	(4)		rated speed	(3) 10	rque controt
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min	Control rod travel mm
loose	800	0,3-1,0	-	-	-	ca. 24	250	6,0	400	11,6-11,7
10036	x =	5,0					250	6,4-6,6	300	11,8-12,3
ca. 54	10,4 4,0 1425	1140-1150 1270-1300 0,3-1,7					670-73	p = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(J)	ill-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting t	luel delivery 5	4a) Idle stop		
Test oil te rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rey/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ⁹ /1000 strokes 7	rev/min 8	Control rod travel mm	
LDA 850	0,7 bar 183,0-186,0 (180,0-189,0)	1140-1150*	LDA 600	0 bar 135,0-138,0 (132,0-141,0)	100	315,0- 355,0 (311,0- 359,0) = 19,5- 21,0 mm Rk	250	6,5	

Checking values in brackets

* 1 mm less control rod travel than col 2

5.84

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DAF 11,6 k 2

Test at n -

600

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travet difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 372-1y +P5/458 R	0,37	0,70 0 0,30	11,0-11,1 11,4-11,5 10,0-10,1 10,3-10,7

Notes

(1) when n

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 11,1 q 1 4. Edition

PES 6 P 110 A 720 LS 375

ROV 250-1100 PA 373 DR

supersedes 10.83

Komb.-Nr. 0 402 046 180

company: MAN

D 2566 MTF engine.

206 kW (280 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings Port closing at prestroke

Rotational speed

250

Control rod travel

7,3-7,5

(2,95-3,15)

mm (from BDC) Zyl. 6; RW = 9.0 - 12.0 mm

mm

Control rod

cm³/100 strokes

Spring pre-tensioning (torque-control valve) Fuel delivery

cm³/100 strokes rev/min 0,4(0,75)12,4+0,1 14,6-14,9 1100

1,0-1,5

Fuel delivery

Difference

100 strokes

cm³/

0,45(0,75)

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed	_ 		Intermediate	rated sp	ed		Lower rate	ed speed	,			Sliding s	leeve travel
	rev/min Control	Control rod	9	Degree of deflection		Control travel	rod	Degree of deflection			Control travel	rod		①
of control lever	rod travel	mm rev/min	20)	of control lever	rev/min	mm	(4)	of control lever	rev/r	nin	mm	(3)	rev/min	mm
,	2	3		4	5	6	\mathbf{O}	7	8		9		10	11
max.	1140	15,2-17,	,8	-	-		-	ca. 13			min.		325	1,7-2,2
ca.65	11,4	1140-115	50						25	100 200	7,3- 580=		900 1100	6,2-6,4 8,0-8,2
04.05	4.0	1225-125							Ī					
								390-51	0					
								3a			<u> </u>			

Torque control travel a = 0,9

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		limitation intermediate speed	high idle s	very characteristics (58)	Starting Idle switchin	. •	Torque- travei	Control rod
rev/min	cm ³ /1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
LDA 1100	0,7 bar 146,0-149,0 (143,5-151,5		LDA 500	0,2 bar 123,0-127,0 (120,0-130,0		(221,0-249,0	700 900	13,3+0, 13,0+0,
LDA	0,7 bar 157,0-161,0 (154,0-164,0		LDA 500	0 bar 110,0-113,0 (107,5-115,5		10,0-15,0 (7,5-17,5)	1000	12,5+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

MAN 11,1 q 1 - 2 -

500 rev/min decreasing pressure - in bar gauge pressure

300		`	The state of the s
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
•	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 375 + RQVPA 373 DR	0,70	0 0,20 0,32	13,3-13,4 11,3-11,4 11,8-11,9 12,6-12,8

Notes

(1) when n

rev/min and gauge pressure =

Testoil-180

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 11,1 q 19 2. Edition

PES 6 P 110 A 720 LS 375

RQ 250/1100PA 658

supersedes 10.83 MAN company.

Komb.-Nr. 0 402 046 251 0 402 046 253 0 402 046 297

D 2566 MT (F) engine 206 kW (280 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDC) Zy1.6; RW = 9.0-12.0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm³/100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	12,4+0,1	14,6-14,9	0,4(0,75)			
250	7,3-7,5	1,1-1,6	0,45(0,79)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider	Full-load :			cifications (4)	Idle spec	•		cifications (5)	Torque	control 3
rev/min	Control rod	rev/min	Central red travel mm	Central rad travel mm 5	rev/min	rev/min 7	Control red travel	rev/min 9	Control rod travel	rev/min 11	Control rod () travel
600 VH	19,2-20,8 = max. 46°	600	20,0	11, 4,0 1350	1145-1160 1900-1220 0-1,0		7,4	100 250 355-3	min.8,9 7,3-7,5 95 = 2,0	700 880	12,4-12,5 13,3-1 34 13,1-13,3 12,6-12,9
	control travel		0.3					1/15-1	160 min-1		1 mm less contr

Torque-control travel on flyweight assembly dimension a = 0,3

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil terr		Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting for the speed	d Control
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7
LDA 1100 LDA 700	0,7 bar 146,0-149,0 (143,5-151,5) 0,7 bar 157,0-161,0 (154,0-164,0)	-	LDA 500 LDA 500	0,2 bar 123,0-127,0 (120,0-130,0) 0 bar 110,0-113,0 (107,5-115,5)	100	215,0-225,0 211,0-229,0)

Checking values in brackets

MAN 11,1 q 19

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting		Measurement	Control rod travel	diminution difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1)	
PES6PLS375	0,70			13,3 -	13,4
+ RQPA658			0	11,3-	11,4
			0,20	11,8_	11,9
			0,32	12,4 -	12,8

Notes

(1) when n

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 11,1 q 23

2. Edition

En

PES 6 P 110 A 720 LS 375 Komb.-Nr. 0 402 046 258 RQ 250/1100 PA 658-4

supersedes 10.83

engine: D 2566 MTSFV 191 kW/2200 min 1 MAN-Nr. 2-7384

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDCZyl. 6

		(4,55 0,10)		-		
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	11,7+0,1	13,6-13,8	0,4(0,8)			
250	6,8-7,0	1,1-1,7	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load	speed re	gulation		Idle spec	ed regula	ation	_	Torque o	control
PRG che	Control rod	Setting po	Contrel	Centrel	cifications (4)	Setting p	coint Control I red travel		cifications (5) Control rod I travel		Control rod
rev/min	travel mm 2	rev/min 3	red travel mm 4	red travel rmrn 5	rev/min 6	rev/min 7		rev/min 9		rev/min 11	
600 VH =	19,2-20,8 max. 46°	600	20,0	10,7 4,0 1350	1145-1160 1200-1230 0-1,0		7,0		min. 8,5 6,9 - 7,1 10 = 2,0		11,7-11,8 11,7-11,9
								146	160 min-1	! !	

Torque-control travel on flyweight assembly dimension a

mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full load di governor of Test oil ten	elivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting f	uel delivery
rev/min	cm ³ /-1000 strokes 2	rev/min	rev/min	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes / mm
LDA 1100 LDA 700	0,7 bar 136,0-138,0 (133,0-141,0) 0,7 bar 133,0-137,0 (130,0-140,0	-	LDA 500 LDA 500	0,17 bar 123,0-127,0 (120,0-130,0) 0 bar 113,0-116,0 (110,0-119,0)	100	215,0-235,0

Checking values in brackets

MAN 11,1 q 23

- 2 -

Testatin	500	rev/min decreasing pressure - in har gauge pressure

11.5 - 11.6	mp/governor	Setting	Measurement	Control rod travel: differen
RQPA658-4 0,17 0,70 11,5 - 11,6 11,7 - 11,8 11,0 - 11,1		Gauge pressure bar	Gauge pressure bar	mm (1)
0,70 11,7 - 11,8 0 11,0 - 11,1	ES6PLS375	0.47		44 5 44
0 11,0 - 11,1	RQPA658-4	0,17	0.70	1
0,11				
			0,11	11,2 - 11,

Notes (1) when n

rev/min and gauge pressure

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 11,1r5

1. Edition

PES6P110A720LS375

RQV 250-1100 PA 669

supersedes

Komb.-Nr. 0 402 046 272

company: MAN

0 402 046 273

D 2566 MTF engine

206 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2,95-3,15)	mm (from BDC)	2y1_6_		
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/m i n	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1100	12,4+0,1	14,6-14,9	0,4(0,75			
250	7,3-7,5	1,0-1,5	0,45(0,7	5)		
			1			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed	1	Sliding s	leeve travel
	Control rod travel	Control rod travel mm rev/min	(a) (26)	Degree of deffection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1130	15,2-1	7,8	-	-	-	ca.15	100	min.8,9	300	2,0-2,
ca. 66	11,4	1140-1	150	! !				250	7,3-7,5	850	5,9-6,1
	1350	1235-13 0 - 1,0					365-48	•		1000	8,2
							39				

Torque control travel a = 0,9

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed (20) limitation intermediate speed	Fuel deliv	very characteristics 5a poeed 50	Starting Idle switching		Torque- travel	Control 5 Control rod
rev/min	cm ³ /1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
LDA 1100 LDA	0,7 bar 146,0-149,0 (143,5-151,5) 0,7 bar	1140-1150*	LDA 500 LDA	0,2 bar 123,0-127,0 (120,0-130,0) 0 bar		225,0-245,0 (221,0-249,0) 7,3-7,5 mmRW	700 900	13,3+0, 13,0+0,
700	157,0-161,0 (154,0-164,0)		500	110,0-113,0 (107,5-115,5)				

Checking values in brackets

* 1 mm less control rod travel than col 2

MAN 11,1 r 5 -

Test at n :

500

rev/min decreasing pressure - in bar gauge pressure

300			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure - bar	Gauge pressure = bar	mm (1) .
PES6PLS375	0,70	0	13,3-13,4 11,3-11,4
+RQVPA 669		0,20	11,8-11,9
		0,32	12,6-12,8
		:	
		<u> </u>	<u> </u>

Notes

(1) when n

rev/min and gauge pressure =

bar (* maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 r 4

2. Edition

En

PE 6 P 110 A 320 RS 375

RQV 250-1100 PA 674

Komb.-Nr. 0 402 046 282

company MAN
engine D 2566 MTE
184 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring ore-tensioning (torque control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
800	12,8+0,1	15,9-16,2	0,4(0,75)	1		
250	6,9-7,1	1,1-1,6	0,45(0,7	9		
						ļ.

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection		travei C	Intermediate Degree of deflection of control lever	rev/min	Control rod travel	Lower rated Degree of deflection of control lever	speed rev/min	Control rod travel mm 3		mm
max. ca.46	1150 10,5 4,0 1350	15,2-17, 1140-115 1205-123 0 - 1,	0 5	-	-	ca. 13	100 250	min.8,5 6,9-7,1 400=2,0	300 800 1100	1,4-1,7 5,0-5,2 7,9

Torque control travel = 1,3 mm

C. Settings for Fuel injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics (56) appead (56)	Starting Idle switchir		Torque- travel	Control (5) Control roc travel
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min B	
LDA 800 LDA 1100	0,7 bar 159,0-162,0 (156,5-164,5 0,7 bar 136,0-140,0 (133,0-143,0)	LDA 500 LDA 500	0,17 bar 122,0-126,0 (119,0-129,0 0 bar 97,0-100,0 (94,5-102,5)	250	215,0-235,0 (211,0-239,0 11,0-16,0 (8,5-18,5)	1100 900	12,8+0, 11,5+0, 12,4+0, 11,7+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

MAN 11,1 r 4

Test at n =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 375 + RQFA 674	0,70	0 0,28 0,11	12,8-12,9 10,2-10,3 12,1-12,2 10,7-11,0

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF11,6 t
5. Edition

En

Testoil-ISO 4113

PE 6 P 100 A 320 RS 384 RQ 225/1000 PA 571 Komb.-Nr. 0 401 846 452 1 - 5 - 3 - 6 - 2 - 4 je 60° + 0,5° (+0,75°)

supersedes 11.82
DAF
company DKDL 1160
engine: 125 kW (170 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at prestroke

3.20-3.30

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-contro! valve) mm 6
600	11,4+0,	9,80 - 10,00	0,35(0,6)			_
250	7,57, 7	0,90 - 1,30	0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Ck 1 Control rod 1		int Control	Test spec Central red travel) 	Idle spec Setting p	coint Centrel red travel	Test spe	cifications 5 Control rod travel	Torque o	Control rod (3)
rev/min	mm 2	rev/min 3	mm 4	mm 5	rev/min 6	rev/min 7	8 8	rev/min 9	10	1 -	12
550	15,6-16,4	550	16,0	9,6 4,0 1250	1100-1130		7,6	250	min. 8,4 7,5-7,7 385 =2,0	I KAA	10,610,8 11,4-11,5 11,2-11,5 10,8-11,6

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation. At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting for Idle spee	Control
revimin 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rav/min 6	red travel cm ³ /1000 strokes:/ mm 7
600	98,0 - 100,0 (96,0 - 102,0)	600	1000	93,0 - 97,0 (90,5 - 99,5)	100	170,0 - 210,0 (166,0-214,0) = 19,5 - 21,0 mm RW
					250	9,0 - 13,0 (6,5 - 15,5)

Checking values in brackets

2

Test Specifications Fuel injection Pumps 2 MPP 001/4 DAF 11,6 t 2 and Governors

3. **Edition**

PE 6 P 100 A 320 RS 384 Komb.-Nr. 0 401 846 453

RQ 225/1100 PA 574

supersedes 11.82

company: DAF

engine:

151 kW (205 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at prestroke

(3.15-3.35)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5+0,	11,1-11,3	0,35(0,6			
225	7,2-7,4	1,0 - 1,4	0,35(0,5	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

_	Control rod Travel		•	Test spec Central rad travel	rev/min	Idle spec Setting p rev/min 7	coint Central rad travel	Test spe	cifications Control red travel mm		Control rod (3)
550	15,6-16,4	550	16,0	9,8 4,0 1300	1140-1155 1170-1200 0 - 1,0		7,3	100 225 325-	min. 7,5 7,2-7,4 365=2,0	1050 800	11,5-11,6 10,8-11,0 11,2-11,4 10,9-11,2

Torque control travel

0,25 mm

Speed regulation: At 1140-1155 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever pp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed Carrier		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	md travel cm ³ /1000 strokes:/mm 7	
600	110,5-112,5 (108,5-114,5)	600	1050	107,0-111,0 (104,5-113,5)	100	195,0-235,0 (191,0-239,0) = 19,5 - 21,0 mm RW	

Checking values in brackets

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 w

1. Edition

engine

En

PE 6 P 100 A 320 RS 384-1

RSV 250-1100 P 5/506

upersedes DAF

Komb.-Nr. 0 401 876 284

company DK 1160 V

Note VDT-I-420/114

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,2-3,3 (3,15-3,35)

mm (from BDC)

		(0,.00,				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min		cm1/100 strokes	cm ^{-y} 100 strokes	mm	cm 1/100 strokes	mm
1	2	3 '	4 '	2	3	6
600	11,5+0,1	11,1-11,3	0,35(0,6)			
250	7,2-7,4	1,2-1,6	0,35(0,55)			
				1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	trate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	11 5	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,25	-	_	-	ca. 21	250 250 570-6	6,8 7,2-7,4 30=2,0	รกก	
ca. 50	9,8 4,0 1400	1125-1135 1225-1255 0,3-1,7					•		900	11,1-11,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp=40°C (104°F)	Rotational- speed limitat		el delivery aractenstics	Starting f	uel delivery 5	4a) Idle stop Control rod		
rev/min	cm ¹ /1000 strokes	changed to) rev/min 3	rev/min	cm/1000 strokes 5	rev/min 6	cm:/1000 strokes 7	rev/min 8	travel mm 9	
600	110,5-112,5 (108,5-114,5)	1125-1135*	1050	106,5-111,5 (104,0-114,0)	100	195,0-239 (191,0-239 = 19,5- 21,0 mm RW	,0)	7,3	

Checking values in brackets

* 1 mm less control rod travel than col. 2



2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11,6 t 6

1. Edition

PE 6 P 100 A 320 RS 384-1

Komb.-Nr. 0 401 846 465

RQ 225/1000 PA 571

supersedes DAF company.

engine:

DKDL 1160 125 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.15-3.35)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference clm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
600	11,4+0,1	9,8-10,0	0,35(0,6			
250	7,5-7,7	0,9-1,3	0,35(0,5	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load : Setting po	•	•	cifications (4)	Idle spec	-		cifications (5)	Torque d	control 3
rev/min	Control rod travel mm 2	rev/min	Control red travel mm 4	Central rad travel mm 5	rev/min	rev/min 7	Control red travel crism 8	rev/min 9	Control rod travel	rev/min 11	Control rod Control
550	15,6-16,4	550	16,	9,6 4,0 1250	1045-1069 1100-1130 0-1,0		7 , 6	100 250 345-	min,8,4 7,5-7,7 385=2,0	1000 820	11,4-11,5 10,6-10,8 11,2-11,4 10,8-11,1
	ontrol travel		0.5	<u>L</u>		<u> </u>	1	045-1	 060 min		1 mm less contro

on flyweight assembly dimension a =

Speed regulation: At

rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d Control
rev/min	cm³/-1000 strokes	rev/min 3	rev/miñ 4	cm ³ /-1000 strokes	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7
600	98,0-100,0 (96,0-102,0)	600	1000	93,0-97,0 (90,5-99,5)	100	180,0-220,0 (176,0-224,0) = 19,5-21,0 mm RW

Checking values in brackets

2

estail-150 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 DAF 11,6 s 3

1. Edition

PE 6 P 100 A 320 RS 384-1

RQ 225/1100 PA 574

Komb.-Nr. 0 401 846 466

supersedes^{*} DAF company **DKL 1160**

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.15-3.35)

mm (from BDC)

	_ \	J, 13-3,337				
Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5+0,1	11,1-11,3	0,35(0,6			
225	7,2-7,4	1,0-1,4	0,35(0,5	\$)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	Full-load s Setting po rev/min 3			rev/min	Idle spec Setting p rev/min 7	coint Control [red travel		citications 5 Control rod travel mm	Torque (rev/min 11	Control rod (3)
550	15,6-16,4	550	16,0	9,8 4,0 1300	1140-1155 1170-1200 0-1,0		7,3	225	min,7,5 7,2-7,4 65=2,0	800	11,5-11,6 10,8-11,0 11,2-11,4 10,9-11,2
	control travel ght assembly dimer	nsion a =	0,25	mm	Spe	ed regula	ation: At	1140-	1155 min ⁻¹		1 mm less contro rod trave

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d Control	
rev/min	cm³/-1000 strokes	rev/min	rev/min 4	cm ³ /-1000 strokes	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7	
600	110,5-112,5 (108,5-114,5)	600	1050	107,0-111,0 (104,5-113,5)	100 225	195,0-235,0 (191,0-239,0) = 19,5-21,0 mm RW 7,2-7,4 mm RW	

Checking values in brackets

7.84

Dg

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 DAF 11.6 t 1 Edition

En

RSV 250-750 P7/479 PE 6 P 110 A 320 RS 385 Komb.-Nr. 0 401 876 250 1 - 5 - 3 - 6 - 2 - 4 0 -60 -120-180-240-300'± 0,5° (±0,75°)

supersettls 82 company DAF

engine DK, DKT, DKS, DKA 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (2,75-2,95) Port closing at prestroke 2,80-2,90 mm

mm (from BDC= RW 9.0 - 12.0

Rotational speed rev/min	Control rod travel	Fuel delivery cm ⁴ /100 strokes 3	Difference cm ^{-/} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} /100 strokes 3	Spring pre tensioning (torque-control valve) mm 6
750	12,6+0,1	16,9 - 17,2	0,4(0,75)			
250	6,8-7,0	2,5 - 3,3	0,45(0,75)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	er rated speed	rev/min	Interme	diate rated	speed	(4)		rated speed	(3) 10	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm 9	rev/min	Control rod travel mm
loose	800 X =	0,3-1,0 3,75	••	-	-	ca.18	250 250	6,9 6,8 - 7,0	-	-
ca. 44	790-79 810-82 950 =0,	95 = 11,6 25 = 4,0 3 - 1,7					245-305	=2,0mm		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(C)	ill-load stop emp=40°C (104°F)	Note	39 Fu	uel delivery paracteristics	Starting t	uel delivery 5	da Idle stop Control rod		
rev/min	cm1/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm-/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
750	169,0 - 172,0 (166,5 - 174,5)	790- 795 *	-	-	250	25,0-33,0 22,5 - 35,5	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 DAF 11,6 t 4

PE 6 P 110 A 320 RS 385-1 Komb.-Nr. 0 401 876 256

RSV 250-750 P 7/479

company DK, DKT, DKS; DKA

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95)

mm (from BDC)= RW 9,0-12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference cm·/	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rév/min 1	mm (2)	cm ¹ /100 strokes	100 strokes	mm 2	cm ¹ /100 strokes	mm 6
750	12,6+0,1	17,0-17,3	0,4(0,75)			
250	6,8-7,0	2,5-3,3	0,45(0,75)		

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

(1) Uppe	r rated speed		Interme	diate rated	d speed	(4)		rated speed	(3) to	rque control
Degree of deflection of control	Control rod travel	Control rod travel mm rev/min				Control- lever deflection	rev/min	Control rod travel mm	rev/min	travel
lever	2	3	4	5	6	in degrees 7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 18	250	6.9	-	-
	x =	3,75	į				250 245-30	6,8-7,0 5 = 2,0		
ca.44	11,6 4,0 950	790-795 810-825 0,3-1,7					243-30	p - 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

C	ill-foad stop emp 40°C (104°F)	6 Rotational speed limitat	39 FL	uel delivery paracteristics	Starting f	uel delivery 5	43) (3)	le stop
rev/min	cm/1000 strokes	changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
750	170,0-173,0 (167,5-175,5)	790-795*	•	-	250	- 25,0-33, (22,5-35,	- 5)	•

Checking values in brackets

* 1 mm less control rod travel than col 2

7.84

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

4

WPP 001/4 MAN 11,1 q 28

1. Edition

__E

PES 6 P 120 A 720 LS 388 RQ 250/1050 PA 658-8 Komb.-Nr. 0 402 046 266 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes -

company MAN

engine: D 2566 MK 279

206 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,0-3,1
Port closing at prestroke (2,05-3,15)

2.95-3.15) mm (from BDC2y1. 6

		2,95-3,15 <i>)</i>	<u></u>	71. 0		
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,8+0,	18,7-18,9	0,5(0,9)			
250	6,3-6,5	1,1-1,7	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min	Control rod travel	Full-load s Setting po rev/min 3	oint	-	rev/min		coint Control red travel		cifications 5 Control rod travel mm	Torque o	Control rod (3)
600 VH :	19,2-20,8 max. 46°	600	20,0		1095-1110 1175-1205 0-1,0	250	6,4	250	min.7,9 6,3-6,5 380 = 2,0	1050 870	11,8-11,9 10,7-10,8 11,6-11,8 10,9-11,2

Torque-control travel on flyweight assembly dimension a =

0,5 _{mm}

Speed regulation At 095-1110 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Idle spee	ruel delivery ed Control
rev/min 1	cm³/-1000 strokes	rev/min 3	rev/min	cm³/~1000 strokes S	rev/min	red travel cm ³ /1000 strokes / mm 7
LDA 750	1,0 bar 187,0-189,0 (184,0-192,0)	-	LDA 650	1,0 bar 178,0-184,0 (175,0-187,0)	100	205,0-225,0 (201,0-229,0)
LDA 1050	1,0 bar 167,0-173,0 (164,0-176,0)		LDA 500	0 bar 113,0-115,0 (110,0-118,0)	250	6,3-6,5 mm RW

Checking values in brackets

7.84

BOSCH

MAN 11,1 q 28

- 2 -

Test	at n	•	

500

rev/min decreasing pressure - in bar gauge pressure

300			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES6PLS388 + RQPA658-8	1,0	0 0,31 0,44	11,8-11,9 9,5-9,6 10,5-10,6 11,2-11,6
		•	-

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

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'WPP 001/4 MAN 11,1 q 26 2. Edition

RO 250/1100 PA 658-7 PES 6 P 120 A 720 LS 388 Z Komb.-Nr. 0 402 046 286 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes 10.83 MAN company:

D 2566 MK/SIB 235 kW/2200 min 1

MAN-Nr. 2-7463

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,0-3,1

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
<u> </u>	2	3	4	2	3	- 6
1100	11,3+0,	1 17.9-18.1	0,5(0,9)			
250	6,4-6,6	1,2-1,8	0,8(1,2)			
		1		ļ		

Adjust the fuel dalivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod travel	Full-load s Setting po rev/min 3	-	-	rev/min	tdle spec Setting p rev/min 7	Control red travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
600 VH=ma	19,2-20,8 x. 46°	600	20,0	10,3 4,0 1350			6,5	250	min.8,0 6,4-6,6 75=2,0		1,3-11,4 12,4-12,5 12,2-12,4 11,5-11,8

Torque-control travel on flyweight assembly dimension a = C. Settings for Fuel Injection Pump with Fitted Governor

1145-1160 min⁻ Speed regulation: At

1 mm less control rod travel

		4 7	1	1	uel delivery d Contre
/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes S	rev/min 6	cm ³ /1000 strokes/ mm 7
7 bar 19,0-181,0 16,0-184,0)	-	LDA 500	0,33 bar 146,0-152,0 (143,0-155,0)		205,0-225,0 201,0-229,0)
,7 bar 97,0-203,0 94,0-206,0)		LDA 500	0 bar 103,0-105,0 (100,0-108,0)	250	12,0-18,0 (9,0-21,0)
	7 bar 9,0-181,0 6,0-184,0) 7 bar 7,0-203,0	3 7 bar 9,0-181,0 6,0-184,0) 7 bar 7,0-203,0	3 4 7 bar - LDA 9,0-181,0 6,0-184,0) 7 bar LDA 7,0-203,0 500	3 4 5 7 bar 9,0-181,0 6,0-184,0)	3 4 5 6 7 bar - LDA 0,33 bar 100 9,0-181,0 500 146,0-152,0 (143,0-155,0) 7 bar LDA 0 bar 250 7,0-203,0 500 103,0-105,0

Checking values in brackets

MAN 11,1 q 26

Test at n 🐇

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure - bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 388 Z RQPA 658-7	0,70	0 0,33 0,43	12,4-12,5 9,4-9,5 10,9-11,0 11,4-11,8

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

MPP 001/4 SCA 8,0 e

8. Edition

PE6P110 A 720 RS 393

ROV 200-1200 PA 467

supersed@.63 company: Scania engine. DN 801

Komb.-Nr. 0 401 846 424

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,0-3,1 mm (from BDC)

Rotational speed	Control rod travel mm	Fuel delivery cm ³ /400 strokes 3	cm ³ / 100 strokes	mm 2	cm ³ /100 strokes	(torque-control valve) mm 6
600	12,0+0,1	8,7-8,9	0,5(0,7)			2,5 ⁺ 0,1
225	5,9-7,1	1,1-1,5	0,2(0,4)			(2,2-2,9)
	1		ł			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated :	speed		Intermediate	rated sp	eed	Lower rated	speed	1	Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod trave	travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		(<u>)</u>
lever 1		rev/min (28)	levér 4	rev/min 5	mm (4)	lever 7	rev/min 8	mm (3) 9	rev/min 10	11
max.	1200	15,2-17,8	-	•	-	ca.16	100	min.8,4		0,5-0,8 3,6-4,2
ca.61	11,0 4,0 1500	1240-1250 1365-1395 0 - 1,0					225 440-5	6,9-7,1 00= 2,0		5,8-6,0 8,2
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil tem		Rotational-speed 20 fimitation intermediate speed	Fuel delivingh idle s	very characteristics 50 peed (50)	Starting die switching	. •	Torque- travel	Control roo
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
600 ნ	87,0-89,0 (85,0-91,0)	1240-1250*	1200	98,5-10 3 ,5 (96,0-106,0)	100	140,0-190,0 =20,0-21,0 mm RN	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

7.84

D16

inst. Kfz-Ausrustung Stuttgart 1, Postfach 50: Printed in the Federal Republic of Germany I d'Allemagne par Robert Bosch GmbH.

①

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 SCA 8,0 e 1

5. Edition

PE6P110A 720 RS 393

ROV 250-1200 PA469

supersed -83

Komb.-Nr. 0 401 846 423

company: Scania engine. DN 801

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,0-3,1 mm (from BDC)

		Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
İ	600	12,0+0,1	8,7-8,9	0,5(0,7)			2,5 [±] 0,1
	225	6,9-7,	1,1-1,5	0,2(0,4)	}		(2,2-2,9)
						<u></u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod	(a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control lever	rodtravel	mm rev/min	20	of control lever	rev/min 5	mm 4	of control lever	rev/min	mm 3	rev/min 10	mm 11
<u> </u>	 	3				<u> </u>	 	 	 		
max.	1200	15,2-17	.8	-	-	-	ca.13	100	min.8,4	200	0,7-0,9
ca.51	11.0 4.0 1450	1240-12 1325-13 0 - 1,	55	Ç.				225 335-3	6,9-7,1 395=2,0	500 800 1200	3,0-3,5 5,1-5,3 8,3
							36				

Torque control travel a = mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro		Rotational-speed (2b) fimitation intermediate speed	Fuel deliv	very characteristics 5a	Starting Idle switchir	. —	Torque- travei	control 5 Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min 6	cm ³ /1000 strokes	rev/min	travel mm 9
500	87.0-89.0 (85.0-91.0)	1240-1250*	1200	98,5-103,5 (96,0-106,0)	100	140,0-190,0 =20,0-21,0 mm RU	•	-

Checking values in brackets

* 1 mm less control rod travel than col 2

Tego (2000) 4113

Test Specifications 40 Fuel Injection Pumps 2 WPP 001/4 SCA 8,0 n 1 3. Edition

and Governors

En

supersede10.83 companyScania engine DN 8 01

PE 6 P 110 A 720 RS 393

RO 750 PA 528

Kom.-Nr. 0 401 846 479

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

12 95-3 151

mm (from BDC)

		(2,90-3,13)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,0+0,1	9,0-9,2	0,5(0,7)			_
	1	1			1	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider ck (\sim 1	Full-load s Setting po		-	cifications (4)	Idle spec	-		cifications (5)	Torque o	(3)
rev/min	Control rad travel mm			Control rad travel rmm 4	Centrel red travel rnm 5	rev/min	3	Control rod travel mm 8	rev/min 9	Control rod travel mm	rev/min	Control rod travel
-	-		•	•	11,0 4,0 850	750-755 784-797 0 - 1,0	-	-	- .	-	-	/ _

Torque-control travel on flyweight assembly dimension a =

Speed regulation: #50-755 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever pp 40°C (104°F)	Control rod stop 3a	Fuel d'alive	ery characteristics 3b	Starting for the starti	d Control
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ min 7
700	90,0-92,0 (88,0-94,0)	-	-	-	100	140,0-190,0 = 20,0-21,0 mm RW

Checking values in brackets

2

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 SCA 8,0 n 3. Edition

PE & P 110 A 720 RS 393 Komb.-Nr. 0 401 846 480 RO 900 PA 528

supersedes. 83 Scania DN 8 01

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

	14	,55-3, 15)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm 6
850	12,0+0,1	9,4-9,6	0,5 (0,7)			
650	12,040,1	3,4-3,0			 	
	ļ			1		
		İ				
					1	
	1	İ			l l	1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	Full-load speed regulation Idle speed regulation I		cifications (5)	Torque control							
rev/min	Control rod travel mm 2	rev/min	Control rod travel mm 4	Control red travel mm 5	rev/min	rev/min 7	Control rod travel rmm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod Cravel
-	-	_	-	11,0 4,0 1000	900-905 941-955 0-1,0	-	-	-	-	•	•

Torque-control travel

900-905 min-1

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

governor	felivery on control lever mp. 40°C (104°F)	2	Control rod stop 3a	Fuel deliv	ery characteristics	(7L)	Starting f	uel delivery d Control
rev/min 1	cm ³ /-1000 strokes 2		rev/min 3	rev/min	cm³/-1000 strokes		rev/min 6	red travel cm ³ /1000 strokes / mm 7
850	94,0-96,0 (92,0-98,0)		-	-	-		100	140,0-190,0 = 20,0-21,0 mm RW

Checking values in brackets

2

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 DAF 11,6 n 3

2. Edition

En

PE 6 P 110 A 320 RS 407-1

RQ 250/1100 PA 428/2 R

Komb.-Nr. 0 401 846 469

supersedes 12.82
company: DAF
engine: DKTL 1160
185 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,75-2,95)

mm (from BDC)= RW 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,3+0,1	14,1-14,4	0,4 (0,75			
250	7,1-7,3	1,0-1,4	0,45(0,75			
				<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load :	•	•	cifications (4)	Idle speed regulation Setting point Test specifications (cifications (5)	Torque control		
rev/min	Control rod travel	rev/min 3	Control red travel mm	Centrel red travel mm	rev/min	rev/min	Centrel red travel	rev/min	Control rod	rev/min	Control rod travel	
600	15,6-16,4	600	16,0	11,3 4,0 1350	1145-1160 1200-1230 0 - 1,0	į	7,2	250	min. 7,8 7,1-7,3 385 = 2,0	850 1100	12,3+0,1 12,2+0,2	
									1160 min-			

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm
LDA 850	0,5 bar 140,5-143,5 (138,0-146,0)	-	LDA 600	0 bar 136,5-139,5 (134,0-142,0)	100	245,0-285,0 (241,0-289,0) =19,5-21,0 mm RW

Checking values in brackets

5.84

BOSCH

DAF 11,6 n 3

Test at n=

600

rev/min decreasing pressure – in bar gauge pressure

600			
Pump/gavernor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6PRS407-1	0,30		12,1 - 12,2
+ RQPA 428/2R		0,50	12,3 - 12,4
		0	12,0 - 12,1
		<u> </u>	

Notes

(1) when n

rev/min and gauge pressure =

bar (maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 v 2. Edition

En

PE6P110 A 320 RS 407-1

RSV 275-1000 P5/458-3

supersed 3.84 company DAF

Komb.-Nr. 0 401 876 275

engine DKCL 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95)

mm (from BgCRW = 9,0 - 12,0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/mm	mm 2	cm·/100 strokes 3	cm ^{-/} 100 strokes 4	mm 2	cm·/100 strokes 3	mm 6
600	12.3+0.1	14.0-14.3	0,4 (0,75)			
275	7,0-7,2	0,9 - 1,4	0,45(0,75)	•		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe Degree of	r rated speed	rev/min Control rod	Intern	nediate rati	ed speed	4 Control	Lowe	r rated speed Control rod	1(3)	rque control Control rod
deflection of control lever	travel mm	mm rev/min				tever deflection in degrees	rev/min	travel mm	rev/min	travel mm 1.1
<u> </u>	2]3	4	5	6		8	9	<u> </u>	
loose	800	0,3-1,0	-	-	-	ca.23	275	6,6	600	12,5-12,6
10036	х :	= 4,5					275	7,0-7,2	1000	11,1-11,3
a.48	10,1	1040-1050	,				675-7	35 = 2,0	750	12,1-12,3
(28)	4,0	1160-1190							850	11,4-11,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill load stop	6 Rotational- speed limitat	11361	Fuel delivery characteristics		uel delivery 5	da Idle stop	
revimin	cm:/1000 strokes	changed to 1 rev/min 3	rev/min	cm·/1000 strokes 5	rev/min 6	cm ^{1/} 1000 strokes 7	rev/min 8	travel mm 9
LDA 600	0,7 bar 139,5-142,5 (137,0-145,0)	1040-1050*	LDA 1000 LDA 600	0,7 bar 114,5-119,5 (111,5-122,5) 0 bar 136,5-139,5 (133,5-142,5)	100 275	245,0-265 (241,0-269 9,0-14,0 (6,5-16,5	0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2



lestatn 600	rev/min decreasing pressure - in	bar gauge pressure	DAF 11,6 v
Pump/qovernor	Setting Gauge pressure bar	Measurement Gauge pressure bar	diminution Control rod travel difference mm (1)
PE6PRS 407-1 +PSVP5/458-3	0,70	0 0,28	12,3-12,4 12,1-12,2 12,2-12,3

tintes

(1) when n

revimin and gauge pressure

bar (maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 RVI 8,8 b 1 c. Edition

Er

PES 6 P 120 A 320 RS 417 ROV 300-1150 PA 527 K

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersed 3.83 company RV I engine MIDS 062030 158 kW (215 PS) Komb.-Nr. 0 402 046 226

Port-closing mark 10,5° camshaft after port closing of cylinder 1.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

•	l	A.
÷4•	İ	Port
Š		Rot
)		rev
ن	I	1
4		11
	i	ϵ
3.0	I	1

Port closing at prestroke		2,0-2,9 (2,75-2,95)	mm (from BDC)	mm (from BDC)						
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6				
1150	8,5-8,6	14,6-14,8	0,5(0,9)							
600	2,6-2,8	1,3- 1,9	0,8(1,2)							

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding s	leevo trav ol
Degree of deflection of control lever	rev/min Control rod travel mm	Control red travel mm rev/min 2a	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deffection of control lever	rev/min 8	Control rod travel mm 3	rev/min	0
	2	3	-	3	\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	 	<u> </u>			
max.	1200	15,2-17,8	-	-	-	ca.10),4-9,7 3,6-3,7
ca. 57	4,7	1205-1215 1275-1305 9-1,9				33n-445 ③		:	857 1150	5,1-5,2 7,5

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F) (2)		Rotational-speed (2b) timitation intermediate speed	Fuel delivery characteristics 5a high idle speed 5b		Starting fuel delivery 6 Idle switching point		Torque- travel	Control 5
rev/min	cm ³ /1000 strokes	rev/min 49	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min	travel mm
1150	14 <i>5</i> ,5-147,5 (14 <i>2</i> ,5-150,5)	1205-1215*	/5ባ 5ባባ	125,0-131,0 (122,0-134,0 71,0-77,0 (68,0-80,0		125,0-145,0 121,0-149,0 18,0-24,0 (15,0-27,0)	350 750	8,5+0,1 6,8+0,4 7,6+0,1 7,0+0,2

Checking values in brackets

* 1 mm less control rod travel than col 2

5.84

BOSCH

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 v 1 2. Edition

En

PE6P 110 A 320 RS 407-1 Komb.-Nr. 0 401 876 276 RSV 275-1100 P 5/458-4

supersedes 3.84

company DAF

engine

DKTL 1160

185 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95)

mm (from.8DG) RW = 9.0 - 12.0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm //100 strokes	cm ¹ / 100 strokes	mm	cm/100 strokes	mm
1	2	3	4	2	3	6
850	12,3+0,1	14,1-14,4	0,4 (0,75)			_
275	7,0-7,2	1,0-1,5	0,45(0,75)			
					1	

Adjust the fuel delivery from each outlet appording to the values in

B. Governor Settings

Uppe	er rated speed	rev/min	Interme	ediate rate	ed speed	(4)	Lowe	r rated speed	(3) to	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
loose	800 x =	0,3 - 1,0 3,25	-	_	•	ca. 18	275 275	6,6 7,0-7,2	400 300	12,5-12,6 12,7-13,2
ca.47	11,3 4,0 1350	1135-1145 1275-1305 0,3- 1,7					675 -	45 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(m)	ull-load stop emp 40 C (104°F)	Rotational speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	43 ld	le stop Control roo
rev/min 1	cm //1000 strokes 2	changed to) rev/min	rev/min	cm³/1000 strokes 5	rev/min	cm ¹ /1000 strokes 7	rev/min 8	travel mm 9
850	0,7 bar 1 40,5-143, 5 138,0-146,0	1135-1145*	L.DA 600	0 bar 136,5-139,5 (134,0-142,0)	1	245,0-285, 241,0-289, 10,0-15,0 (7,5-17,5	0)	-

Checking values in brackets

1 mm less control rod travel than col 2

BOSCH

Gaschaftsbereich KH. Kundendienst. Kfz. Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50: D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

DAF 11,6 v 1 -2-

Test at n =

600

rev/min increasing pressure - in bar gauge pressure

600	·		diminution
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (†) .
PE6PRS 407-1 +RSVP5/458-4	0.70	0,30	12,3 - 12,4 12,0 - 12,1 12,1 - 12,2

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 v 2 1. Edition

En

PE 6 P 110 A 320 RS 407-1

Komb.-Nr. 0 401 876 277

RSV 275-1000 P 5/458-5

supersede s

company

DAF DKFL 1160 185 kW

Note VDT-I-420/114!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8-2,9

Port closing at prestroke (2,75-2,95)

mm (from BDC)

RW = 9,0 - 12,0 mm

estoil-ISO 4113

6

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	Control rod travel	rev/min Control rod travel mm rev/min	Interme	ediate rated	speed	Control- lever deflection in degrees	Lower	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800 x	0,3-1,0 5,0	-	-	-	ca. 25	275 275	6,6 7,0-7,2 0=2,0	600 1000 790	13,0-13,1 12,1-12,3 12,6-12,8
ca.50	11,1 4,0 1360	1040-1050 1195-1225 0,3-1,7					, 30 /		865	12,2-12,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(9)	ill-load stop emp=40°C (104°F)	Rotational-speed limitat Note Speed limitat			Starting fi Idle	fuel delivery 5	ldle stop	
rev/min	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ⁹ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9
LDA 600	0,7 bar 151,0-154,0 (148,5-156,5)	1046-1050*	LDA 1000 LDA 600	0,7 bar 135,5-140,5 (132,5-143,5) 0 bar 136,5-139,5 (133,5-142,5)	100	245- 285,0 (241,0- 289,0)	275	7,1

Checking values in brackets

* 1 mm less control rod travel than col. 2 7.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

DAF 11,6 v 2

diminution Control rod traveldifference

(1) .

12,8-12,9 12,1-12,2 12,6-12,7 12,3-12,5 - 2 -

Toct	at	n	

PE6P..RS407-1 + RSV..P5/458-5

rev/min decreasing pressure - in bar gauge pressure

restain	600	increasing				
Pump/governor		Setting		Measurement		Contr
		Gauge pressure =	bar	Gauge pressure =	bar	mm
and the same of th		·				

0,70

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

0,30 0,26

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11.6 n 4 2. Edition

PE 6 P 110 A 320 RS 407-1 RQ 275/1000 PA 641-1 Komb.-Nr. 0 401 846 474

supersede 12.82 companyDAF DKCL 1160 engine: 155 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,8-2,9
Port closing at prestroke (2,75-2,95) mm (from 80°C) RW 9,0-12,0 mm

Rotational speed rev/min	T	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	12,3+0,1	13,9-14,1	0,4(0,75)			
275	7,0-7,2	0,9-1,4	0,45(0,75)		
		7 1 1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	•	Full-load			cifications (4)	idle spec	-		cifications (5)	Torque o	(3)
	Control rod travel	rev/min 3	Control red travel mm	Central rad travel mm 5	rev/min	rev/min	Centrel red travel rmm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod () travel
600	15,6-16,4	600	16,0		1045-1060 1105-1135 0 - 1,0	275	7,1	275	min. 8,6 7,0-7,2 385=2,0	600 000 815 985	12,5+0,1 11,1+0,2 12,0+0,2 11,3+0,4
	entrol travel		0.6				102	5-106	0 min 1		1 mm less contr

on flyweight assembly dimension a =

rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	//	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7	
LDA 600	0,7 bar 139,0-142,0 (136,5-144,5)	-	LDA 1000 LDA 600	0,7 bar 114,5-119,5 (111,5-122,5) 0 bar 136,5-139,5 (134,0-142,0)	100	245,0-285,0 241,0-289,0) = 19,5-21,0 mm RW	

Checking values in brackets

DAF 11,6 n 4

Testat n =

600

rev/min decreasing pressure ~ in bar gauge pressure

000			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 407-1 + RQ PA 641-1	0,28	0,50	12,2-12,3 12,3-12,4 12,1-12,3

Notes

(1) when n $^{\circ}$

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 DAF 11,6 o 2 2. Edition

PE 6 P 120 A 320 RS 415

RSV 250-1100 P5/474

supersedes8.81 company: DAF

Romb.-Er. o 401 876 247

DKS 1160 P

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,8 - 2,9 Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
650	11,9+0,	18,8 - 19,2	0,5(0,9)			
250	6,7-6,9	1,9 - 2,3	0,65(0,9	5)		
		}				
	Ĭ		1	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed	j	Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	3 Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	111
loose	800	0,3-1,0	-	-	-	ca.24	250	6,3	650	12,1+0, 10,4+0,
	Х :	5,75	ļ				250	6,7-6,9 75=2,0	800	11,5+0, 10,9+0,
6.53	9.4	1140-1150	ı				410-	75=2,0		
(S)		1200-1230					į	i		
i	1350	0,3-1,7	l _					<u> </u>		<u> </u>

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop				Starting Idle	Starting fuel delivery title		Sa Idle stop	
Test oil temp rev/min 1	cm ³ /1000 strokes	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 650	0,7 bar 188,0-192,0 (185,0-195,0)	1140-1150*	LDA 1100 LDA 600	0,7 bar 186,0-192,0 (182,5-195,5) 0 bar 133,0-137,0 (130,0-140,0)		310,0-350,0 306,0-354,0 = 19,5 - 21,0 mm RW	250)	6,8	

Checking values in brackets

* 1 mm less control rod travel than col. 2

DAF 11,6 o 2

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Testoil-ISO 4113

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure - b	ar Gauge pressure = ba	ar mm (1) .
RS 415 with	0,7		11,9 - 12,0
P5/474		0,27	11,4 - 11,5
		0,12	10,2 - 10,4
		0	9,8 - 9,9
		·	

Notes.

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

40

WPP 001/4 DAF 11,6 y

1. Edition

PE 6 P 120 A 320 RS 415-1 Komb.-Nr. 0 401 846 493 RQ 250/1100 PA 417-2

supersedes Company DAF

engine DKV 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.75-2.95)

mm (from BDC)

		70-2,307				
Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm 6
	-					
650	11,6+0,1	17,9 - 18,3	0,5 (0,9)			4
250	6,2-6,4	1,1 - 1,5	0,65(0,9)	:	
			+ -			
						1
]		l		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	D	Full-foad s Setting po rev/min 3		-	cifications rev/min 6	4	rev/min	oint Control rad travel mm	Test spe	cifications 5 Control rod travel	rev/min	Control rod (3)
700	15,6 -1	6,	700	16,0	9,6 4,0 1300	1135-1 1190-1 0 - 1	220	1	6 , 3	250	min.7,2 6,2 -6,4 475 = 2,0	1090 785	1,8-11,9 0,6-10,8 11,5-11,7 10,8-11,1

Torque-control travel on flyweight assembly dimension a =

0,55

1135 - 1150 min⁻¹

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on ocontrol lever mp. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery Idle speed Control		
rev/min	cm ³ /~1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes / mm 7	
LDA	0,7 bar	-	LDA	0,7 bar	100	320,0 - 360,0	
650	179,0 - 183,0		1090	197,0 - 203,0		(316,0 - 364,0)	
	(176,0 - 186,0)			(193,5 - 206,5)		= 19,5 - 21,0	
			LDA	0 bar		mm RW	
			600	151,0 - 155,0 (148,0 - 158,0)	250	6,2 - 6,4 mmRW	

Checking values in brackets

7.84

BOSCH

69

DAF 11,6 y

-2-

_		
Test	at	n

500 rev/min decreasing pressure - in bar gauge pressure

300			
Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure - bar	Gauge pressure = bar	mm (†) .
PE & P.,RS 415-1 + RQ PA 417-2	υ, 70	0 0,44 0,35	11,6 - 11,7 10,5 - 10,6 11,3 - 11,4 10,7 - 10,9
		•	

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

E10

En -10

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 0 4 2. Edition

En

PE 6 P 120 A 320 RS 415-1

RSV 250-1100 P5/474

supersedes 1.63

Komb.-Nr. 0 401 876 258

company DAF engine DKS-1160 P

Note VDT-I-420/114

Testcil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8-2,9

(2.75-2.95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Difference cm ¹ / 100 strokes	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
650	11,9+0,1	18,8-19,2	0,5(0,9)			
250	6,7-6,9	1,9-2,3	0,65(0,95			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed rev/min			Intermediate rated speed			Lower rated speed			Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm 9	rev/min	をうかかり 10d travel mm 11
loose	800 x =	0,3-1,0 5,Q	-	-	-	ca. 24	250 250	6,3 6,7-6,9	650 1100	12,1-12,2 10,4-10,6
ca.53	9,4 4,0 1350	1140-1150 1200-1230 0,3-1,7					410-475	2,0	900	11,5-11,7 10,9-11,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop		6 Rotational Speed limital Characteristics		Starting fuel delivery 5		4a) Idle stop		
rev/min	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min	Control rod travet mm 9
LUA 650	0,7 bar 188,0-192,0 (185,0-195,0)	1140-1150*	LDA 1100 LDA 600	0,7 bar 186,0-192,0 (182,5-195,5) 0,bar 133,0-137,0 (130,0-140,0)	100	310,0-350, 306,0-354 = 19,5 - 21,0 mm R	,0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

-2-

Test at n =

600

decreasing pressure – in bar gauge pressure increasing

DAF 11,6 0 4

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 415-1 + RSVP 5/474	0,27	0,70 0 0,12	11,4-11,5 11,9-12,0 9,8-9,9 10,2-10,4

Notes

(1) when n=

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 RVI 8,8 b 2

3. Edition

PES 6 P 120 A 320 RS 417 RQV 300-1150 PA 527-1K

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersede 3.83

company:RVI engine: MIDR 062030

Komb.-Nr. 0 402 046 247

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		2,8-2,9 2,75-2,95)	mm (from BDC)						
Rotational speed	7	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)			
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6 ~			
1150	8,5-8,6	14,8-15,0	0,5 (0,9)						
300	4,1-4,3	1,8-2,4	0,5 (0,9)						
		k at 6° cam sha el 9.0-12.0 mm.		port clos	ing for 1st. c	ylinder at			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
deflection	rod travel	Control rod travel mm (2a)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	(1)
1	2	3	4	5	6	7	8	9	10	11
max.	1200	15,2-17,8	-	-	-	ca. 10	100	min. 5,7	250	0,4-0,7
ca. 58	7,5	1205-1215					300	4,1-4,3	550	3,6-3,7
	4,0	1275-1305		l		ļ	İ		850	5,1-5,2
	1450	0 - 1,0				330-445 3a)			1150	7,5

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation intermediate speed		very characteristics (5e)	Starting Idle switchir	. •	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1150	147,5-149,5 (144,5-152,5		750	132,0-138,0 (129,0-141,0		120,0-140,0 (116,0-144,0		
			500	80,0-86,0 (77,0-89,0)		18,0-24,0 (15,0 - 27,0)		7,7+0, 7,2+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.84

BOSCH

Testoil-130

WPP 001/4 RVI 9.8 a 2

1. Edition

PES 6 P 120 A 320 RS 419-1

RO 750 PA 595-1

supersedes...

Komb.-Nr. 0 402 046 232

company RVI

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

MIDS 062045 engine: 130 kW

tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

m ffrom BDCDUL = 0 0 42 0 i

Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
13,3+0,1	24,6-24,8	0,5(0,9)			
5,8-6,0	1,7-2,3	0,8(1,2)			
	mm 2 13,3+0,1	mm cm ³ /100 strokes 2 3 13,3+0,1 24,6-24,8	travel cm ³ /100 strokes cm ³ / 100 strokes 2 3 4 0,5(0,9)	travel travel travel cm ³ /100 strokes 2 cm ³ /100 strokes 4 cm ³ /100 strokes 2 13,3+0,1 24,6-24,8 0,5(0,9)	travel travel travel travel cm ³ /100 strokes 2 cm ³ /100 strokes 2 cm ³ /100 strokes 2 cm ³ /100 strokes 3 cm ³ /100 strokes 2 cm ³ /100 strokes 2 cm ³ /100 strokes 2 cm ³ /100 strokes 2 cm ³ /100 strokes 2 cm ³ /100 strokes 3 cm ³ /100 strokes 2 cm ³ /100 strokes 3 cm ³ /100 strokes 2 cm ³ /100 strokes 3 cm ³ /100 strokes

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider ck	\bigcirc	Full-load s Setting po				,, , , , , , , , , , , , , , , , , ,						
rev/min	Control rod travel mm 2		rev/min 3	Control rod travel rnm 4	Control rod travel rnm 5	rev/min 6	rev/min 7	Control red travel rmm 8	rev/min 9	Control red travel mm 10	rev/min 11	Control rod travel mm 12	
-	-		•	-	12,3 4,0 900	750-755 787-800 0-1,0	•		•	-	-	-	

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

750-755 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	Selivery on control lever np 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Contra		
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/ mm 7	
700	246,0-248,0 (243,0-251,0)	-	-	-	100	160,0-180,0 (156,0-184,0)	

Checking values in brackets

5.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung.

4. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stultgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Alfamagne par Robert Bosch GmbH.

2

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 11,4 h

5. Edition

PES 6 P 110 A 820 LS 422

RO 300/1100 PA 327-1

Komb.-Nr. 0 402 046 218 0 402 046 239 supersede7.83
Daimler-Benz
company OM 407
engine: 147 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,95-3,15)

mm (from BDC)

Rotational speed rev/min	travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10.6+0.1	10.3-10.5	0,4(0,8)	÷		
300	8,2-8,4	1,4-2,0	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load : Setting po	•	-	cifications (4)	Idle spec	_		cifications (5)				
rev/min 1	Control rod travel mm	rev/min 3	Centrel red travel mm	Central rad travel mm 5	rev/min	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod (travel		
600	13,0-14,0	600	13,5	9,6 4,0 1350	1145-1160 1175-1205 0-1,5	300		300 ¢	nin.7,5 5,0-6,2 90=2,0	-	-		
	control travel		<u> </u>				11	45 - 11	60 min 1		1 mm less contro		

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	control lever mp 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting fuel delivery Idle speed Control		
rev/min 1	cm ³ /-1000 strokes	rev/min	rev/min 4	cm³/-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes / mm 7	
1100	103,0-105,0 (100,0-108,0)	500	500	76,0-80,0 (73,0-83,0)		100	130,0-150,0 (126,0-154,0)	

Checking values in brackets

5.84

E/15

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung € 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 9,5 a 5. Edition

Testoil-ISO 4113

PES 5 P 110 A 820 LS 434 Komb.-Nr. 0 402 045 022 1 - 3 - 5 - 4 - 2 RQ 300/1100 PA 327-3

je 72 $\stackrel{+}{=} 0.5^{\circ} (0.75^{\circ})$

supersede 19.83

company Daimler-Benz OM 409

141 kW (192 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC) Zy1. 5

		(2,33-3,13)				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ¹ /100 strokes	mm
1	2	3	4	2	3	6
1100	11.4+0.1	12.0 - 12.2	0,4(0,8)			_
300	8,0-8,			ł		
	!					
				1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking	g of slider	Full load	speed re	gulation		Idle speed regulation				Torque control		
	Control rod travel	Setting po	Control red travel		cifications Control rod travel	Setting p	Control rod travel	·	cifications Control rod travel	rev/min	Control rod travel	
rev/min	mm 2	rev/min 3	mm 4	rev/min 5	mm 6	7	8	9	10	11	12	
600	13,8-14,6	600	14,2	10,5 4,0	1145-1160 1175-1205	300	7,1	100 300	min.10,0 8,0-8,2	-	. -	
								375·	415=2,0			
										\	}	

Torque control travel on flyweight assembly dimension a

Speed regulation A1145 - 1160 min⁻¹

1 mm tess control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	control lever	Control rod stop	Fuel deliv	rery characteristics	Starting (Starting fuel delivery		
Test oil temp 40°C (104°F) rev/min		rev/min 3	rev/min 4	cm ⁴ /- 1000 strokes 5	rev/min	cm³/100 strokes 7		
1100	0 120.0 - 122,0 (117,0 - 125,0)		600	102,0 - 106,0 (99,0 - 109,0)	100	130,0 - 150,0 (126,0-154,0)		

Checking values in brackets

5.84

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 MB 9,5 a 5

3. Edition

En

PES 5 P 110 A 820 LS 434

RSV 350-1100 P0/485

1 - 3 - 5 - 4 - 2 je 72° $\stackrel{+}{=}$ 0,5° ($\stackrel{+}{=}$ 0,75°) Komb.-Nr. 0 402 075 002

supersedQ .83

company Daimler-Benz

OM 409

137 kW (186 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,0 - 3,1(2,95-3,15)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm/100 strokes	cm ^{-/} 100 strokes	mm	cm /100 strokes	mm
1	2	3	4	2	3	6
1080	11,4+0,1	12,0-12,2	0,4 (0,8)			
350	7,7-7,9	1,1-1,7	0,4 (0,7)			
	1					
				1		,

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	er rated speed	rev/min	Interm	ediate rat	ed speed	(4)	Low	er rated speed	3 to	rque control
Degree of deflection of control	travel	travet				Control- lever deflection	rev/min	travel mm	rev/min	travel mm
lever	2	3	4	5	6	in degrees 7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.27	350	7.8	-	-
	X =	2,25				1	350 470-	7,7-7,9		
ca. 48	10,4 4,0 1300	1120-1130 1190-1220 0,3-1,7				,	1,0-	**		

Set idle-speed auxiliary spring at 2 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

C	ill load stop	Rotational Sa Fuel delivery characteristics			Starting I	luel delivery 5	de stop		
Test oil to rev/min 1	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm1/1000 strokes 7	∕ e v/min	Control root travel mm	
1080	120,0-122,0 (117,0-125,0)	1120-1130*	-	-	100	130,0-150, (126,0-45 ¹	0 - .o)	-	

Checking values in brackets

* fimm less control rod travel than col. 2

Geschaftsbereich KM. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Fapublic of Germany Imprimé en République Fédérale d'Alfemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 9,8 b 2 1. Edition

En

PE 6 P 120 A 320 RS 438-1 RQV 275-1200 PA648 Komb.-Nr. 0 401 846 497 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes – compaRV I engineMIDS 062030 150 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

		1-	2	3	6
2+0,1 13	,3 - 13,5	0,5 (0,9			
4-7,6 1	,5 - 2,1	0,8 (1,2)		
-					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s		1		Intermediate	rated sp	1	Lower rated	speed	Control rod	Stiding s	leeve travel
deflection of control	rev/min Control rod travel mm 2	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	travel	rev/min 10	mm 11
max.	1230	15,2-17	,8	-	-	-	ca.12	200	min.9,0	250	0 - 0,8
ca. 65	10,2 4,0 1500	1365-139					275-360 ③	275	5,9-6,1		4,7-5,0 6,1-6,3 8,3

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 20 limitation intermediate speed			Starting Idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	revimin	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1200	133,0-135,0	12551265*	75 0	116,0-122,0	100	180,0-200,0	-	-
	(130,0-138,0			(113,0-125,0)	(176,0-204,0)	
						l		

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.84

E18

BOSCH

Test Specifications Fuei Injection Pumps (A) and Governors

WPP 001/4 DAF 11,6 u

4. Edition

PE 6 P 110 A 720 RS 441

Komb.-Nr. 0 401 876 252

RSV 250-1200 P 5/493

supersedes 7.83 DAF DHS 825 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,8-2,9
Port closing at prestroke (2,75-2,95) mm

mm (from BDC) RW=9,0-12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-contre! valve)
rev/min	mm (2)	cm1/100 strokes	cm ^{-/} 100 strokes	mm	cm:/100 strokes	min
1	2	3	4	2	3	6
1000	12,2+0,1	13,7-14,0	0,4(0,75)			
250	5,0-5,2	0,7-1,2	0,45(0,75)		

Adjust the fuel delivery from each outlet according to the values in $oldsymbol{\mathsf{L}}$

B. Governor Settings

11 / /	rated speed Control rod travel mm		Interm	ediale rate	d speed	Control- lever deflection in degrees		rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800 X =	0,3-1,0	-	<u>. 1 </u>	. L'	ca. 24	250	4,6 5,0~5,2 85=2,0	400 300	12,4-12,5 12,6-13,1
ca. 58	11,2 4,0 1500	1249-1250 1330-1360 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill load stop	6 Rotational- speed limitat	uel delivery naracteristics	Starting fuel delivery (5)			e stop	
rev/min	emp 40°C (104°F) cm·/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm·/1000 strokes 5	rev/min	cm½1000 strokes 7	rav/ m in 6	Control rod travel mm
LDA 1000	0,7 bar 137,0-140,0 134,5-142,5)	1240-1250*	LDA 600	0 bar 91,5-94,5 (89,0-97,0)	250	245,0-285 (241,0-285 =19,5- 21,0 mm RW 7,0-12,6 (4,5-14,	,0)	_

Checking values in brackets

* 1 mm less control rod travel than col 2

DAF 11,6 u

D. Adjustment Test for Manifold Pressure Compensator

Testatn 500	rev/min decreasing pressure - in	bar gauge pressure	UAF 11,6 U
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 441 + RSVP 5/493	0,70	0 0,36 0,27	12,2-12,3 10,1-10,2 11,7-11,8 10,8-11,2

^{*}lotes

rev/min and gauge pressure /

bar (= maximum full-load control rod travel)

⁽¹⁾ when n

Test Specifications
Fuel Injection Pumps ②
and Governors

40

WPP 001/4 DAF 11,6 u 1

2. Edition

En

PE 6 P 110 A 720 RS 441 Komb.-Nr. O 401 846 461

RQ 225/1200 PA 617

KÚ 253/1500 PM

companDAF engine: DHS 825

Testoil-iSO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Control rod

travel

Port closing at prestroke (

Rotational speed

(2,75-2,95)

Fuel delivery

mm (from BDQW=9,0 - 12,0 mm

	710 -	12 10 min	
Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
	1_	12	i a

	rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
	1000	12,2+0,1	13,7-14,0	0,4 (0,75)			
1	225	5,5-5,7	1,0 -1,5	0,45(0,75			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Checking of slider Full-load services and services and services are services and services are services and services are services and services are services and services are services and services are services and services are services are services and services are services and services are services are services are services and services are s		int	gulation Test spec	Idle speed regulation Setting point Test specifications (5)						
rev/min	Control rod travel mm 2	rev/min 3	Control rad travel mm 4	Central rad travel rnm 5	rev/min 6	rev/min 7	Control red travel mm B	rev/min 9	Control rod travel mm	rev/min 11	Control rod travel mm
650	15,6-16,4	650	16,0	11,2 4,0 1450	1235-1250 1310-1340 0 - 1,0		5,3	225	min. 6.7 5,5-5.7 10 = 2,0		12,2-12,3 12,1-12,3

Torque-control travel on flyweight assembly dimension a =

шm

Speed regulation A1235-1250 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	felivery on control lever mp. 40°C (104°F)	2	Control rod stop 3		Fuel delivery characteristics			•	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes		rev/min 3		rev/min 4	cm³/-1000 strokes 5		rev/min 6	red travet cm ³ /1000 strokes:/ mm 7		
LDA 1000	0.7 bar 136,5-139,5 (134,0-142,0)		-		600	0 bar 91,5-94,5 89,0-97,0)		(245,0-285,0 241,0-289,0) =19,5-21,0 mm RW		

Checking values in brackets

5.84

BOSCH

DAF 11,6 u 1 - 2

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = ba	Gauge pressure = bar	mm (1) .
PE6PRS441	0,36		11,7 - 11,8
+ RQPA617		0,70	12,2 - 12,3
		0	10,1 - 10,2
		0,29	10,8 - 11,2
	-		
			·

tintes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

estoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MB 11,4 1 5

3. Edition

PES 6 P 110 A 820 LS 442 Komb.-Nr. 0 402 046 234 RQ 300/1100 PA 327-5

supersedes Daimler-Benz companyOM 407 engine 162 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDOZyl. 6

Rotational speed rev/min	Control rod travel . mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Füël delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100 300	11,0+0. 8,0-8,2		0,4(0,8)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin			cifications (4)	Idle speed regulation Setting point Test specifications (5)							
rev/min	Control rod travel mm	rev/min 3	Control red travel mm 4	Control red travel rmm 5	rev/min 6	rev/min 7	Control red travel rom 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod (travel)
600	13,0-14,0	600	13,5	10,0 4,0 1300	1145-1160 1180-1210 0-1,0		8,1	100 300 375-	min. 9,5 8,0-8,2 115= 2,0	•	•

Torque-control travel on flyweight assembly dimension a =

Speed regulation. At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control tever pp 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes 2	rėv/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rod travel cm ³ /1000 strokes / mm 7	
1100	116,0 - 11 ⁸ ,0 (11 <i>3</i> ,5 - 120,5)	500	600	93,0 - 97.0 (90,0 - 100,0)	100	130,0 - 150,0 (126,0-154,0)	

Checking values in brackets

7,84

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Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 11,4 L3

3. Edition

PES 6 P 110 A 820 LS 442

ROV 300-1100 PA 594-3

1.83 supersedes Daimler-Benz company engine 04 407 162 kW (220 PS)

0 402 946 301

Komb.-Nr. 0 402 046 233

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers A. Fuel Injection Pump Settings

3,2-3,3
Port closing at prestroke (3,15,3,3,5)

mm (from BDC) ZV1. 6

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100 300	11,0+0,1 8,0-8,2		0,4(0,8) 0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s			•	Intermediate	rated sp	•	Lower rated	speed	la	Sliding sleeve travel	
deflection	rev/min Control rod travel	Control rod travel	(a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		
lever	mm	rev/min	(28)			mm (4)	lever	rev/min		rev/min	ł 1
1	2	3		4	5	6	7	8	9	10	11
max.	1100	15,2-17,	8	-	-	-	ca.32	100 300	min. 9,0 7,3-7,5	250 530	1,0-1,3 3,9-4,2
ca. 60		1140-115 1175-120 0 - 1,	5	-			320-459			820 1100	5,5-5,8 8,1
							39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation sitermediate speed	Fuel deliv	very characteristics 5a peed 5b	idle	fuel delivery 6	Torque-control (travel	
rev/min	cm ³ /1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travei mm
1	2	3	4	5	6	7	8	9
1100	116,0-118,0 (113,0-121,0)	1140-1150*	600	93,0- 97,0 90,0-100,0)	100	130,0-150,0 126,0-154,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.84

Test Specifications Fuel Injection Pumps (A) WPP 001/4 MB 11,4 1 6 and Governors

2. Edition

En

PES 6 P 110 A 820 LS 442-1

Komb.-Nr. 0 402 076 053

RSV 350-1100 P 0/485

supersede 1.83 Daimler-Benz OM 407

177 kW (241 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

3,2 - 3,3(3,15-3,35)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm/100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm // 100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,7+0,1	12,5-12,7	0,4 (0,8)			
35û	7,8-8,0	1,4-2,0	0,4 (0,7)			
	İ					

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degrée of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque controt Control rod travel mm 11
loose	800 ×	0,3-1,0 = 3,0	•	-	-		350 350	7,9 7,8-8,0 5 = 2,0	-	-
ca .51	10,7 4,0 1250	1140-1150 1220-1250 0,3-1,0					435-49	5 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b) Fu	ult load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting t	uel delivery 5	4a Idle stop	
Test oil to rev/min	emp 40°C (104°F) cm1/1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm
1100	125,0-127,0 (122,0-130,0)	1140-1150*	600	11 1,0-115 ,0 (108 ,0-118 ,0)	100	140,0-160 136,0-164	,0 - 0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 8,3 o 2. Edition

En

PE 6 P 100 A 720 RS 447

RSV 250-1200 P5/493

supersedes 6.83

Komb.-Nr. 0 401 876 260

engine DHT 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,2 - 3,3 (3,15-3,35)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes	cm ¹ / 100 strokes	mm 2	cm /100 strokes	mm 6
1000	11,4+0,1	11,9-12,1	0,35(0,6)			
250	5,3-5,5	0,7-1,1	0,3(0,5)			
			1			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees	Lower rev/min	rated speed Control rod travel mm	11 O J	rque control Control rod travel mm
loose	800 x =	0,3-1,0	-	-	-	ca.24	250 100	4,9 min. 7,0	400 300	11,6-11,7
ca.58	10,4 4,0 1530	1240-1250 1325-1355 0,3-1,7					250 540-60	5,3 - 5,5 0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor.

(2b) ^{Fu}	II-load stop	6 Rotational speed limitat		uel delivery paracteristics	Starting fuel delivery 5 4a Idle stop			
Test oil te revimin t	cm //1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min 6	cm ^{1/1000} strokes 7	rev/min 8	Control rod travel mm
LDA 1000	0,7 bar 118,5-120,5 (116,5-122,5)	1240 - 1250*	LDA 600	0 bar 92,5-96,5 (90,0-99,0)	100 250	210,0-230 (206,0-23 ¹ 7,0-11,0 (4,5-13,5		-

Checking values in brackets

* 1 mm less control rod travel than col 2

DAF 8,3 o

- 2 -

Testatn -

600

rev/min decreasing pressure - in bar gauge pressure

Setting	Measurement	diminution Control rod travel- difference
Gauge pressure = bar	Gauge pressure = bar	mm (1)
0,32		11,1 - 11,2
	0,70	11,4 - 11,5
	0	10,4 - 10,5
	ũ,23	10,5 - 10,9
r		
	Gauge pressure = bar	Gauge pressure = bar Gauge pressure = bar 0,32 0,70 0

tiotes

: 1) when n

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 8,3 o 1 2. Edition

<u>En</u>

PE 6 P 100 A 720 RS 447 Komb.-Nr. 0 401 846 471

RQ 225/1200 PA 617

74

supersedes 3.83

company DAF

engine DHT 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / -100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000 225	11,4+0,1 5,3-5,5	11,9-12,1 1,0-1,4	0, 罗(0,6) 0, 罗(0, 55			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin		Full-load s	•	-	cifications (4)	Idle spec Setting p	•		cifications (5)	Torque ((3)
rev/min 1	Control rod travel mm	rev/min 3	Control red travel rnm 4	Control red travel mm 5	rev/min 6	rev/min 7	Control red travel mm B	rev/min	Control rod travel mm 10	rev/min	Control rod (
650	15,6-16,4	650	16,0	10,4 4,0 1450		225	5,4	225		1000 1200	1,4-11,5 1,3-11,5

Torque-control travel on flyweight assembly dimension a

U mm

1235-1250 min

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	d Control
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min	red travel cm ³ /1000 strokes:/ mm 7
LDA 1000	0,7 bar 118,5-120,5 (116,5-122,5)	-	LDA 600	0 bar 92,5-96,5 (90,5-98,5)	100	210,0-230,0 (206,0-234,0) = 19,5-21,0 mm RW
					225	10,0-14,0 (7,5-16,5)

Checking values in brackets

7.84

rest at n = rev/min decreasing pressure - in bar gauge pressure

DAF 8,3 o 1 - 2

600			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 447 + RQPA 617	0,32	0,70 0 0,27	11,1 - 11,2 11,4 - 11,5 10,4 - 10,5 10,5 - 10,9
		•	

Notes

(1) when n

rev/min and gauge pressure =

bar (~ maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 UNI 10,3 a 2. Edition

PE 6 P 110 A 720 RS 453

ROV 425-1000 PA 438-1

Komb.-Nr. 0 401 846 475

supersed 5.83

company: Unic-IVECO engine: 8205-03-500

129 kW (175 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Port closing at prestroke Spring pre-tensioning (torque-control valve) Control rod travel **Fuel delivery** Control rod travel Difference Fuel delivery Rotational speed cm³/ 100 strokes cm³/100 strokes mm cm³/100 strokes rev/min mm 0.4 (0.75 1000 9.8-10.1 10.0+0.1 2,1-2,7 425 6,9-7,1 0,45(0.万)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated Degree of deflection of control lever	rev/min	Control rod ta travel mm rev/min 28	Intermediate Degree of deflection of control lever	rated sports revimin	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding 8 rev/min 10	mm
max. ca.55	9,0	15,2-17,8 1040-1050 1150-1180 0-1,0	-	-	-	ca. 15 420-515 30	425	min.8,5 6,9-7,1	400 600 800 1000	1,5-1,6 3,7-4,3 5,8-6,1 7,2

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil terr		Rotational-speed (20) limitation intermediate speed	Fuel deliv	ery characteristics 5e peed 50	Starting Idle switchir	. •	Torque-	control (5) Control rod
rev/min	cm³/1000 strokes	rev/min 4e	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	98,0-101,0 (95,5-103,5)	1040-1050*	-	-	100	220,0-240,0 (216,0-244,0)	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.84

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 11,9 a 2. Edition

<u>En</u>

PE 6 P 120 A 720 LS 470 RQ 250/1100 PA 684 Komb.-Nr. 0 402 046 288 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes 9 · 83 MAN company: D 2866 KF engine: 265 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8°-2,9 (2,75-2,95)

mm (from BDC/Zy1. 6; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,5+0,1	23,8-24,0	0,5(0,9)			
250	5,2-5,4	1,2-1,8	0,8(1,2)			
				,		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load :	•	-	<u> </u>	idle spec	_			Torque o	
PRG che rev/min f	Control rod	Setting po rev/min 3	Control red travel mm	Test spec Central rad travel mm 5	rev/min	Setting prev/min	Control rod travel		cifications (5) Control rod travel mm 10	rev/min 11	Control rod travel mm
600 VH :	19,2-20,8 = max. 46°	600	20,0		1145-1160 1180-1210 0-1,0		5,3	250	min.6,8 5,2-5,4 55 = 2,0	1100 935	12,5-12,6 11,3-11,4 12,4-12,6 11,7-12,0
	ontrol travel		0.4	5			1	 145-1	60 min-1	<u> </u>	1 mm less contr

Torque-control travel on flyweight assembly dimension a =

0,45 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever p 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting f	uel delivery d [Confirm
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes / mm 7
LDA 750 LDA 1100	1,0 bar 238,0-240,0 (235,0-243,0) 1,0 bar 213,0-219,0 (210,0-222,0)	•	LDA 650 LDA 500	1,0 bar 239,0-245,0 (236,0-248,0) 0 bar 139,0-141,0 (136,0-144,0)	100	225,0-245,0 (221,0-249,0)

Checking values in brackets

7.84

BOSCH

MAN 11,9 a

- 2 -

Toct	at	r.	

500

rev/min decreasing pressure - in bar gauge pressure increasing

	difference
Gauge pressure = bar mm (1)	
+ RQPA684 0 9,3 0,40 11,1	- 12,6 - 9,4 - 11,2 - 10,6

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 WPP 001/4 MAN 11,9 a1 and Governors

engine:

2. Edition

PE 6 P 120 A 720 LS 470

ROV 250-1100 PA 700

superseden 83 company: MAN

Komb.-Nr. 0 402 046 295

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

265 kW

D2866 KF

tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		2,8-2,9 2,75-2,05)	mm (from BDC)	Zy1. 6;	RW = 9,0 - 12,	0 mm
Rotational speed	travel	Fuel delivery	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rav/min 1	mm 2	cm ³ /100 strokes 3	4	2	3	6
750	12,5+0,	23,8-24,0	0,5(0,9)			_
250	5,2-5,		0,8(1,2)			
,	ļ					

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed							Sliding s	Sliding sleeve travel				
Degree of deffection of control	rev/min Control rod travel	travel \		Degree of deflection of control		Contro travel	frod	Degree of deflection of control		Control rod travel			
lever		rev/min (20)	lever	rev/min 5	mm 6	(4)	lever 7	rev/min 8	mm (3)	rev/min 10	mm 11
max.	1170	15,2-17,	8	-	-	<u> </u>	-	ca.9	100	min.6	,8	325	1,6-2,
ca.62	10,3	1140-115 1225-125	50 55						250 360	5,2-5, -420=2,0		800 1100	5,3-5,9 7,8
	1350	0 - 1,0 	j					3a					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter rev/min		Rotational-speed (2b) timitation intermediate speed rev/min (4a)	high idle s	cm ² /1000 strokes	idie switchir		Torque- travel rev/min 8	Control 5 Control rod travel mm 9
LDA 750 LDA 1100	1,0 bar 238,0-240,0 (235,0-243,0) 1,0 bar 213,0-219,0 (210,0-222,0)	1140-1150*	LDA 650 LDA 500	1,0 bar 239,0-245,0 236,0-248,0 0 bar 139,0-141,0 (136,0-144,0)		225,0-245,0 (221,0-249,0)1100 900	12,5+0,1 11,3+0,1 12,1+0,2 11,5+0,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.84

MAN 11,9 a 1 -2-

Testatn

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6PLS 470 +RQVPA 700	1,0	0 0,40 0,24	12,5-12,6 9,3-9,4 11,1-11,2 10,2-10,6

Nutes (1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 11,9a3 1. Edition

ROV 250-1100 PA 707 PES 6 P 120 A 720 LS 470-1 Komb.-Nr. 0 402 046 296 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes company: MAN D 2866 KUL 265 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ³ /100 strokes 3	mm (from BDC) Difference cm³/ 100 strokes 4	Control rod travel mm	- 12.0 mm Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,7+0,1	23,0-23,2	0,5 (0,9)			
250	5,4-5,6	1,2-1,8	0,8 (1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed Lower rated speed			Sliding s	Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 2a	deflection of control	rev/min	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max. ca. 65	10,9	15,2 -17,8 1140-1150	-	-	-	ca. 12	į .	min. 7,0 5,4-5,6	1	1,4-1,6 5,0-6,2 8,3
	1350	1225-1255 0 - 1,0				330-450 ③				0,0

Torque control travel a = 0,4

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) Fuel delivery characteristics (5e) Starting fuel delivery imitation high idle speed (5b) Starting fuel delivery idle switching point		high idle speed (56) Idle switching point		. •	Torque- travel	Control S Control rod travel
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min 6	cm³/1000 strokes	rev/min 8	
LUA 750 LUA 1100	1,0 bar 230,0-232,0 (227,0-235,0) 1,0 bar 218,0-224,0 (215,0-227,0)		LDA 650 LDA 500	1,0 bar 231,0 -237,0 (228,0-240,0 0 bar 128,0-130,0 125,0-133,0)	100	225,0 -245,0 221,0 -249,0	750 1100 935	12,7+0, 11,9+0, 12,5+0, 12,0+0,

* 1 mm less control rod travel than col. 2

6.84

MAN 11,9a3

-2-

Test at n -	500	rev/min decreasing pressure – in bar gauge pressur
-------------	-----	--

Setting	Measurement	diminution Control rod travel- difference
Gauge pressure = bar	Gauge pressure = bar	mm (1) .
1,0		12,7 - 12,8
	0	9,4 - 9,5
	0,40	11,2 - 11,3
	0,19	9,9 - 10,3
·		
	Gauge pressure = bar	Gauge pressure = bar 1,0 0 0,40

Notes

(1) when n -

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 11,6 a

2. Edition

PE 6 P 100 A 720 RS 473 Komb.-Nr. 0 401 846 494

RO 300/1100 PA 269-1

supersedes 12.83

Daimler-Benz

OM 355 177 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDCRW=9,0-12,0 mm Port closing at prestroke (3.45 - 3.65)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm³/ t00 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100 300 600	13,1+0, 8,1-8,3	12,5-12,7 1,7-2,3 C, Sp. 4u.5	0,35(0,6 0,35(0,5 0,5(0,7)	5)		,

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load	speed re	gulation		idle spec	ed regula	ation		Torque d	\sim
PRG che	Control rod	Setting p	Control	Control	cifications (4)	Setting p	coint Control I rod travel	Test spe	cifications (5) Control rod I travel		Control rod
rev/min 1	travel mm 2	rev/min	red travel	red travel mm 5	rev/min 6	rev/min 7		rev/min 9		rev/min 11	
600	15,6-16,4	600	16,0		1145-1160 1200-12 30 U-1,		6,1	300	min.7,5 6.0-6,2 00=2,0	-	-
	ontrol travel	<u> </u>			L	}		145-1	160 min 1		1 mm less contr

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting for	Contrat
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes / mm 7
1100	125,0-127,0 (123,0-129,0)	-	600	117,0-121,0 (114,5-123,5)	100	150,0-170,0 (146,0-174,0)

Checking values in brackets

7.84

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 VOL 12,0g2
2. Edition

En

PE 6 P 120 A 320 RS 3075

RSV 650-750 P4/421

Komb.-Nr. 0 401 876 718
Values only apply to test nozzle-and-holder

supersedes
company
engine

Volvo
TID 120 FG

assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke

(2,55-2,75)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm/100 strokes	cm '/ 100 strokes	mm	cm 1/100 strokes	mm
1	2	3	4	2	3	6
700	11,8+0,1	23,3 - 23,5	0,5 (0,9)			
650	4,0-4,2	2,2 - 2,6	0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1(') ' '	r rated speed Control rod travel mm		Intermed	trate rated	speed	Control- tever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	11 5 3	rque control Control rod travel mm 11
loose	800 x =	0,3-1,7 2,75	-	-	-	ca. 33	650 650	4,1 4,0 - 4,2	-	-
ca. 37	10,8 4,0 930	750-755 775-785 0,3 - 1,7					650 -	710= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Ft	ull-load stop	6 Rotational- speed limitat		uel delivery paracteristics	Starting (uel delivery 5	4a Idle stop		
Test oil to rev/min 1	emp 40°C (104°F) cm/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm	
700	233,0 - 235,0 (230,0-238,0)	750 - 750*		-	-	-	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kiz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fedérale d'Allemagne par Robert Bosch GmbH. **Testoil-ISO 4113**

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 1 p 2

1. Edition

PE 12 P 110 A 920 LS 3081

RQV 300-1075 PA 588

supersedes

1 - 4- 9 - 8 - 5 - 2 - 11 - 10 - 3 - 6 - 7 - 12

companyKHD engine: BF 12 L 413 FC

 $0-45-60-105-120-135-180-195-240-255-300-315^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	itroke	(2°75-2-95)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1075	11,2+0,	13,2 - 13,6	0,4 (0,8)			
300	6,7-6,9	1,6 - 2,2	0,4 (0,7)			
	1	Į.		1	3	i

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed		Intermediate	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod (te	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel	Ĭ	0
of control lever	rod travel mm	mm rev/min (2)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
],	2	3	4	5	6	7	8	9	10	11
max.	1125	15,2-17,8	-	-	-	ca. 13	100	min.8,3	250	0,6-0,8
ca. 65	10,2	1115-112		İ			300	6,7-6,9	525 800	3,5-3,7 5,8-6,0
ca. 05	4,0	1175-120				350-500	1		.075	8,1
ļ	1300	0-1,0								
						3a				

Torque control travel a =

mm

C. Settings for Fuei Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed			ics 5a Starting fuel delivery idle switching point		Torque- travel	Control fod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
LDA 1075	0,75 bar 132,0-136,0 (130,0-138,0)	1115 - 1125*	LDA 850 LDA 500	0,75 bar 129,0-133,0 (126,0-136,0) 0 bar 82,0- 84,0 (78,0- 88,0)		130, 0- 150, 0	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

KHD 1 p 2

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure bar	Gauge pressure # bar	mm (1) .
PE 12 PLS 3081 with. PA 588	. 0,75	0 0,35 0,23	11,2 - 11,3 9,2 - 9,3 10,4 - 10,5 9,6 - 9,8

Testoil-ISO 4113

Notes (1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control red travel)

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 UNI 9,6 a 2

1. Edition

PES 6 P 110 A 720 RS 3105

RO 275/1150 PA 711

Komb.-Nr. 0 402 046 748

supersedes ...

UNIC-IVECO 8220-22.709

177 kW

All test specifications are valid for Bosch Fuel Injection Pump Test/Benches and Testers

A. Fuel Injection Pump Settings.

Port closing at prestroke

(3,15-3,55)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,3+0,1	11,4-11,7	0,4(0,75)			
275	5,9-6,1	1,5-2,0	0,45(0,75)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod travel	Full-load s Setting po rev/min 3	-	-	rev/min	Idle spec Setting p rev/min 7	_		cifications Control rod travel mm	rev/min	Control rod (3)
600 VH=	19,2-20,8 max. 46°	600	20,0	10,3 4,0 1400			6,0	275	min.7,5 5,9-6,1 90=2,0	1150 600	11,3-11,4 11,3-11,5
	ontrol travel ght assembly dimer	nsion a =	0	mm	Spe	ed regula	11 ation: At	95-12	10 min ⁻¹	<u></u>	1 mm less contro rod trave

C. Settings for Fuel Injection Pump with Fitted Governor

	letivery on control fever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv		Starting fuel delivery Idle speed Control		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev.	/min	red travel cm ³ /1000 strokes / mm 7
LDA 1150	0,7 bar 114,0-117,0 (111,5-119,5)	-	LDA 400	0 bar 75,0-78,0 (72,5-80,5)	10	0	160,0-180,0 156,0-184,0)

Checking values in brackets

UNI 9,6 a 2

- 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure : bar	Gauge pressure = bar	mm (1) .
PES 6 PRS 3105 +RQ PA 711	0,70	0 0,26 0,20	11,3-11,4 10,0-10,1 10,9-11,0 10,3-10,5

Notes

(1) when n

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 PEN 12,0e 1. Edition

PE 6 P 120 A 320 RS 3121

RSV 200-900 P4/421 R

Volvo-Penta company **TAMD 121 C**

Komb.-Nr. 0 401 876 732

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,6 - 2,7 (2,55-2,75)

mm (from BDC)

	(-)					
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque-control valve)
rev/min	mm (2)	cm1/100 strokes	cm ^{-/} 100 strokes	mm	cm ⁻ /100 strokes	mm
,	2	3	4	2	3	6
700	11,8+0,1	23,7 - 23,9	0,5 (0,9)			2,5 ± 0,1
200	5,5-5,7	1,6 - 2,2	0,5 (0,7)			(2,2 - 2,9)
					1	
L	<u>_l</u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interm	ediate ral	ed speed	Control- tever deflection in degrees 7		rated speed Control rod Iravel mm	3 to	rque control Control rod travel mm
loose	800 x	0,3-1,7 = 4,0	-	-	-	ca.20	200 200	5,1 5,5-5,7	-	-
ca. 53	4.0	940-950 970-1000 ,3-1,7					265-325	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(J)	oil-load stop emp_40°C (104°F)	Rotational speed limital Note		iel delivery naracteristics	Starting fi Idle	uel delivery 5	4a) 'd'	e stop Control rod
revimin 1	cm ¹ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm1/1000 strokes 5	rev/min 6	cm·/1000 strokes 7	rev/min 8	travel mm 9
700	237,0 - 239,0 (234,0 - 242,0)	* 940-950	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuftgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.



Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MB 11,0 c 1 5. Edition

En

PE 6 P 110 A 320 LS 3805 RQ 300/1150 PA 187-6 Komb.-Nr. 0 401 846 749 1 - 6 - 3 - 5 - 2 - 4 0 - 75-120-195-240-3150 + 0,50 (+ 0,750)

company: Daimler-Benz

engine: OM 421

engine: 017 42, 159 kW (216 PS)

See Service Information VDT-I-401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3, 95-4, 15)

mm (from BDCZy1. 6; RW = 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery * cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery * cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,5+0,1	12,8-13,0	0,4(0,8)	12,4+0,1	13,2-13,4	
300	8,3-8,5	1,2-1,8	0,4(0,7)	8,3-8,5	1,2-1,8	
600	-	C, Sp. 4 u. 5	0,6(0,9)	-	C, Sp. 4 u. 5	
*	with ret	urn throttlc (1		*	without return	throttle (2)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load s	speed re	gulation	_	Idle spec	ed regula	stion	_	Torque (control
PRG che	ick (1)	Setting po	pint	Test spec	cifications (4)	Setting p	point	Test spe	cifications (5)		3
rev/min : 1	Control rod travel mm 2	rev/min 3	Control red travel rnm 4	Central red travel rnm 5	rev/min 6	rev/min 7	Centrel red travel rmm 8	rev/min 9	Control rod travel mm	rev/min 11	travel
650	13,2-14,0	650	13,6	11,5 4,0 1350	1195-1210 1240-1270 0 - 1,0		8,4	100 300 430-	min.10,0 8,3-8,5 470 =2,0	-	-
	onitol travel							1195-	1210 min		1 mm less contr

Torque-control travel on flyweight assembly dimension a =

ım S

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min 6	red travel cm ³ /1000 strokes:/ rnm 7	
(1) 1150	128,0-130,0 (125,0-133,0)	600	600	120,0-124,0 (117,0-127,0)	100	130,0-150,0 (126,0-154,0)	

Checking values in brackets

5.84

Checkin	g of slider ck (1)	Full-load Setting p	•	•	cifications (4)	tdle sper Setting p	point		cifications (5)	Torque ((3)
rev/min 1	Control rod fravel mm	rev/min	Control rod travel mm	Control red travel mm 5	rev/min	rev/min 7	Control rod travel mm 8	tea/wiu	travel mm	rev/min	Control rod travel mm
650	13,2-14,0	650	13,6		1195-1210 1240-1270 0 - 1,0	300	8,4	300	min.10,0 8,3-8,5 70 = 2,0	-	-
tormore	ontroi travel							1105_1	210 min ⁻¹		1 mm less contro

Torque control travel on flyweight assembly dimension a

__

Speed regulation At 1195-1210 min

m less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	telivery on control lever mp 40 C (1104 F)	Control rod stop	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d Control
rev/min	cm*/-1000 strokes	rev/min	rev/min	cm ¹ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm 7
(2) 1150	132,0-134,0 (129,5-136,5)	600	600	110,0-114,0 (107,0-117,0)	100	130,0-150,0 (126,0-154,0)
; 1						
 			,			

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

Checking PRG che	g of slider	Full loa	d speed re		cifications (4)	ldle spec	oint		cifications (5)	Torque c	(3)
	Control rod travel mm 2	rev/mir	Control rod travel mm	Control rod travel mm	rev/min	rev/min 7	Control rod travel mm 8	rev/min	Control rod travel mm	rev/min	travel mm

Torque control travel on flyweight assembly dimension a

__

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	iull load delivery on povernor control lever est oil temp 40°C (104 F)		Control rod stop	a) Fue	delive	ry characteristics	36)	Starting for	d Control
rev/min	cm*/-1000 strokes	Ų	rev/min -	rev/	/min	cm ³ /-1000 strokes 5		rev/min	red travel cm ³ /1000 strokes / rnm 7

Test Specifications Fuel Injection Pumps 2 NPP 001/4 MB 11,0h and Governors

3. Edition

RO 750 PA 374 R PE 6 P 110 A 320 LS 3805 Komb.-Nr. 0 401 846 738 1 - 6 - 3 - 5 - 2 - 40 -75 -120-195-240-315° $^{+}$ 0,5° ($^{+}$ 0,75°) See Service Information VDT-I-401/102

company Daimler Benz OM 421 116 kW (158 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

4.00-4.10 Port closing at prestroke

mm (from BDC) RW 10,5 / Zyl. 6

En

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery * cm ³ /100 strokes 3	cm³/	Control rod travel mm 2	*	Spring pre-tensioning (torque-control valve) mm 6
700	13,8+0,	14, 1 - 14,3	0,4(0,8	13,8+0,	1 14, 1-14,3	·
300	8,2-8,4	1,3-1,9	0,4(0,7	8,2-8,4	1,3-1,9	
* with	return	hrottlc (1)		,	without return	throttle (2)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG ched	g of slider ck Control rod	Full-load : Setting po				tdle spec Setting p	coint Control	Test spe	cifications 5	Torque d	control Control rod I travel
	travel	rev/min 3	red travel mm 4	ned travel mm 5	rev/min 6		red travel mm 8	rev/min 9	travel mm 10	rev/min (1	mm 12
-	•	-	-	12,8 4,0	750-755 795-805	-	-	-	-	-	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co Test oil tem	hivery on ontrol lever p. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting f	Contrat
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm
700 (1) u. (2)	141,0 - 143,0 (138,0 - 146,0)	-	-	-	100	130,0 - 150,0

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 11,0 c 2

3. Edition

PE6P110A 320LS 3805 Komb.-Nr. 0 401 846 748

ROV 300-1150PA 524-4

9.83 supersedes

* without return throttle (2)

company.

Daimler-Benz OM 421

1 - 6 - 3 - 5 - 2 - 4

 $0 - 75 - 120 - 195 - 240 - 315^{\circ} \div 0.5^{\circ} (\div 0.75^{\circ})$

engine

159 kW (216 PS)

Note VDT-I-401/102

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All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke (3,	95-4,15)	mm (from BDC)	Zyl. 6; P	14=9,0-12,0 mm	
Rotational speed	Control rod travel	Fuel delivery *	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1150	12,5+0,	1 12,8-13,0	0,4(0,8)	12,4+0,1	13.2-13.4	·
300	8,3-8,		0,4(0,7)	8,3-8,5	1,2-1,8	
600	_	C. ip. 4 u.5	0.6(0.9)	-	C, Sp. 4 u. 5	

Adjust the fuel delivery from each outlet according to the values in [

throttlc (1)

B. Governor Settings

return

Upper rated s	speed	1	Intermediate	rated sp	1	Lower rated	speed	1	Sliding s	leeve travel
deflection	rev/min Control	Control rod ta	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		
	rod travel	mm rev/min 28	of control lever	rev/min	mm (1)	of control	rev/min	тт 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1150	15,2-17,8	-	-		ca.19	100	min.10,0	250	1,0-1,2
ca.65	11,5	1190-1200					300	8,3-8,5	550	3,4-3,7
	4,0	1240-1270							850	4,9-5,3
	1400	0-1,0				330-73 39	b	 	1150	7,7

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di Control-roo Test oil ten	stop	Rotational-speed (2b) limitation intermediate speed	Fuel deliv		Starting Idle switchir	, •	Torque- travel	control 5 Control rod
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5 .	6	7	8	9
1150 (1)	128,0-130,0 (125,0-133,0)	1190-1200*	600	120,0-124,0 (117,0-127,0		130,0-150,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.84

Kundendienst, Kfz-Ausrustung mbH, D-7 Stuttgert 1, Fostfech 50: Printed in the Federal Republic of Germany e Féderate d'Allemagne par Robert Bosch GmbH

Upper rated sp	peed	• • • •		Intermediale	rated spe	ed		Lower rated	speed			Sliding sl	eeve travel
009		Control rod	(1a)	Degree of deflection		Control ro	d	Degree of deflection		Control root travel	1		\cup
of control	rodtravel	mm rev/min	(2a)	of control lever	ten/win	mm	4	of control lever	rev/min	mm	③	rev/min	mm
1.1	2	3		4	5	6		7	8	9		10	
max.	1170	15,2-1	7,8	-	-		•	ca.19	100 300	min.10 8,3-8		250 550	1,0-1,2 3,4-3,7
ca. 65		1 1 2 2 2 2								, -		850 1150	4,9-5,3 7,7
	1400	1 _			ĺ			330-73	þ				. •
!		! 						33)					

Torque control travel a

~~

C. Settings for Fuel Injection Pump with Fitted Governor

Full load de Control rod Test oil tem		Rotational speed (2b) timitation intermediate speed	Fuel deliv	rery characteristics (5a)	Starting lidle switching	<u>C.</u> ,	Torque- travel	Control rod
rev/min	cm /1000 strokes	rev/min	rev/min	cm ¹ /1000 strokes 5	rev/min	cm /1000 strokes	rev/min	travel mm
1150	132,0-134,0 (129,5-136,5		600	110,0-114,0 (107,0-117,0)	100	130,0-150,0 (126,0-154,0)	-	-

Checking values in brackets

Testoil-180 4113

* 1 mm less control rad travel than col :

B. Governor Settings

Upper rated	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve travel
Degree of deflection	revimin	Control rod	(la)	Degree of deflection	1	Control rod	Degree of deflection	Ì	Control rod travel	,	0
of control	rod travel		(2a)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
	2	3		4	5	6	7	8	9	10	
1	1]
				1]				İ		
		l i]			į		1	!
					l					İ	
}											
							(3a)				

Torque control travel a

ma

C. Settings for Fuel Injection Pump with Fitted Governor

Full load of Control ro Test oil ter		intermediate speed	Fuel deln high idle s	very characteristics 5a speed 5b	Starting Idle switching	fuel delivery 6 ng point	Torque- travel	Control Control rod
rev/min	cm 1/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min		rev/min	mm
,	2	3	4	5	6	7	8	9
ļ		 						
	İ				1			1
:			1	1	1			
			1	l	1			
	Ì				1			1
i :					l			
1	ļ		1		1	f		
	į		1					

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 14,6 f Edition

estoil-ISO 4113

PE8P120A320LS3811

RO 300/1150 PA 556 Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes 10.82 Daimler-Benz company OM 422 A endine 243 kW (330 PS)

Komb.-Nr. 0 401 848 734

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke

(3,95-5,15)

mm (from BDC)

Relational speed rev/min	Control rod travel mm	Fuel delivery cm ¹ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150 300	10.4+0.1 5,0-5,2		0,4(0,8) 0,8(1,2)	Į.		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load			cifications	idle spec	_		cifications	Torque (control
rév/min	Control rod travel mm	Setting po	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel		Control rod travel mm	rev/min	Control rod travel mm 12
600	14,7-16,3	600	15,5	9,4	1195-1210 1225-1255	300	4,2	100 300 340-	min.6,0 4,1-4,2 380=2,0 mm	-	-
	control travel	nsion a		mm	Spe	eed regul	ation At	1195-	1210 m i n	<u> </u> -1	1 mm less control rod trave

on flyweight assembly dimension a C. Settings for Fuel Injection Pump with Fitted Governor

governor	felivery on control lever mp 40°C (104 F)	Control rod stop	Fuel delive	ery characteristics	Starting fuel delivery		
rev/min 1	cm ⁴ /~1000 strokes	rev/min	rev/min	cm³/-1000 strokes 5	rev/min	cm³/100 strokes 7	
1150	162,0 - 164,0 (159,0 - 167,0)	~	600	152,0 - 158,0 (149,0 - 161,0)	100	125 - 145	

Checking values in brackets

6.84

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 18,3 c 3. Edition

En

PE 10 P 110 A 320 LS 3818

RQ 300/1150 PA 437-2

 supersed & 83 company Daimler-Benz engine: OM 423 261 kW (355 PS)

Komb.-Nr. 0 401 849 705

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump, Settings

Port closing at prestroke

(3.95-4.15)

mm (from BDCLyl. 10;

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /102 strokes 3	Difference dm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,1+0,1	12,4 - 12,6	0,4 (0,8)			
300	7,9-8,1	1,2 - 2,0	0,4 (0,7	}		
600 900	-	C, Sp. 4 u.5	(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider ck (1)	Full-load s	•	•	cifications (4)	Idle spec	-		cifications (5)	Torque o	control 3
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Central red travel rnm 5	rev/min 6	rev/min		rev/min 9	Control rod travel mm 10	rev/min 11	Control rod (
600	13,0-14,0	600	13,5		1190-1205 1225-1255 0 - 1,5		6,1	300	min.7,7 6,0-6,2 425= 2,0	600	11,1+0,1 11,7+0,2 11,6+0,2

Torque-control travel on flyweight assembly dimension a =

0,2 _{mm}

Speed regulation: At 1190 - 1205 min

i mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever p 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting f Idle spee	uel delivery d 1 Contre
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm
1150	124,0-126,0 (121,5-128,5)	-	600 900	110,0-114,0 (107,0-117,0) 118,0-123,0 (115,0-126,0)	100	140,0-160,0 (136,0-164,0)

Checking values in brackets

7.84

BOSCH

<1°

131.70

531

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 17,2 d

1. Edition

PE 8 P 120 A 920/5 LS 3827

Control rod

13,1+0,1

5,2-5.4

mm

ROV 300-900 PA 475-1

supersedes -

Komb.-Nr. 0 401 848 757

company: Fiat-IVECO

1-8-4-3-6-5-7-2 je $45^{\circ} \div 0.5^{\circ} (\div 0.75^{\circ})$

Rotational speed

rev/min

900

300

8280.22.201

309 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tub ing 1 680 750 067
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(3,45-3,65)mm (from BDG) DM=Q ()=12 () mm Port closing at prestroke

Fuel delivery

cm³/100 strokes

21,3-21,5

1,3-1,9

	KW=7,U-1	Z,U IIIII	
Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
4	2	3	6
0,5(0,9)			
0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed		Interme	diate rated sp	peed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	travel C	Degree deffecti of contr lever	on	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	0
max.	970	15,2-17,	8 -	-	-	ca.11		min.6,8 5,2-5,4	300 450	1,6-1,7 3,5-4,1
ca. 61	12,1 4,0 1200	940-950 1045-1075 0-1,0				310-41 5	300	D,E-3,4		7,8
						3				

Torque control travel a =

C. Settings for Fuel injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed			Starting Idle switching	. •	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
LDA 900	0,9 bar 213,0-215,0 (210,0-218,0		LDA 550 LDA 500	0,9 bar 231,0-237,0 (228,0-240,0) 0 bar 129,0-131,0 (126,0-134,0)		170,0-190,0 (166,0-194,0	-	•

Checking values in brackets

* 1 mm tess control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

FIA 17,2 d

- 2 -

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 PLS 3827 +RQV PA 475-1	0,90	0 0,44 0,33	13,1-13,2 9,3-9,4 12,2-12,3 9,9-10,3

Notes

(1) when n -

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

64

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 19,9 d 2. Edition

ROU 250-350/1100 ZWA 43 DR PE 6 ZW 150/120 RS 1007/11 Komb.-Nr. 0 402 436 039

Replaces · Firm: MTU

1 - 2 - 3 - 4 - 5 - 6 $0 - 45 - 120 - 165 - 240 - 285^{\circ} + 0,5^{\circ}$ (+0,75°)

Engine: MB 6 V 331

Note VDT-W-400/305

Governor adjustement according to VDT-I-420/112

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing at prestroke 2,50-2,60 mm (from BDG)1 6

Rotational	Control-	45-2,65) Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed rod travel		Average value	in fuel delivery	Checking values	valve)
min 1	mm	cm ³ /1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
1000	18,0	497,0-507,0	15,0(22,0)	494,0-510,0	-
600	9,0	131,0-151,0	16,0(24,0)	126,0-156,0	
300	9,0	70,0-90,0	10,0(15,0)	65,0-95,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	speed		Medium ra	ted spe	ed	Lower rat	ed spee		Torqu	e control
Control lever deflection degrees	mm min ¹ 2	Control- rod travel mm min ' 3	Control lever flection degrees 4	min ¹ 5	Control- rod travel mm 6	Control lever de- flection degrees 7	min ¹ 8	Control- rod travel mm 9	min ' 10	Control- rod travel mm 11
ca. 58	650 1100 1150 1200 1230	17,5-18,0 13,7-16,0 3,0-10,0		100 350 650 1000 1150	14,5-17,5 7,6-8,2 1,8-2,4 1,8-2,4 0	ca.21	150 250 400 530	9,5-11,8 7,7-8,2 2,2-4,5 0	-	-

Torque control travel a =

Speed regulation: At 1130-1140 m1mmliess control rod travel

C. Settings for fuel-injection pump with fitted governor

on gove	Il-load delivery Control rod stop at speed stop at speed		Fuel-de charact		Starting fuel delivery		
min ' 1	cm 1/1000 strokes 2	min ' Leerlauf	min ¹ 4	cm³/1000 strokes 5	min ' 6	cm³/1000 strokes 7	
1100	18 mm RW	390 = 8,0 mm RW	-	•	100	18,0-18,2 mm RW	
		= 0,0 iisii Kw				Shutoff solenoid 0,5 - 1,5 mm in front of stop	

Checking values in brackets

05.84

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 31.7 e 3. Edition

ROU 750 ZWA 57 R PE 8 ZW 160/120 RS 1013/11

Kcmb.- Nr. 0 402 438 018

1 - 2 - 6 - 3 - 4 - 5 - 7 - 8 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

Replace 93.84 MTU

Engine: MT 8 V 396

Note VDT-W-Gen./7

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing at prestroke (2, 45-2, 65) mm (from BDQv1 . 8

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min '	mm	cm ³ /1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
600	18,0	513,0-523,0	16,0(24,0)	510,0-526,0	_
600	9,0	140,0-160,0	12,0(18,0)	135,0-165,0	
300	9,0	72,0-92,0	11,0(16,0)	67,0-97,0	
	1				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor settings

Sleeve position 49,5 mm

Upper rated Control lever deflection degrees 1	mm min '	Control- rod travel mm min '	Medium ra Control lever flection degrees 4	min '	ed Control- rod travel mm 6	Lower rat Control · lever de- flection degrees 7	1	d Control- rod travel mm 9	Forque min 1	e control Control- rod travel mm
ca. 52	750 720 750 770 780 800	18,0 25,6-30,6 17,0-19,0 6,8-11,8 0,5-8,0 0	-	•	•	-	-		-	-

Torque control travel a =

Speed regulation: At 760-765 min mm less control rod travel

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever I temperature 40°)	Control rod stop at speed	Fuel-de charact	livery eristics	Starting fuel delivery		
min '	cm³/1000 strokes 2	min 'Leerlaufanschl	min ¹ 4	cm³/1000 strokes 5	min ' 6	cm³/1000 strokes 7	
750	18 mm RW	12 mai RW	-	-	-	-	

Checking values in brackets

06.84

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 29,9 a

11. Edition

Replaces 12:83

PE 8 ZWM 140/120 RS 19/11 Komb.-Nr. 0 406 038 019

RQU 375/1100 ZWA 25 DR

Engine: MB 837 A a

1 - 2 - 6 - 3 - 4 - 5 - 7 - 8 ie $45^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$

Note VDT-W-Gen./7

Governor adjustement according to VDI-I-420/112
All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

mm (from BDC) Zy1. 8

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min '	mm	cm ³ /1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	13	4	5	
600	18,0	373,0-378,0	11,0 (16,0)	370,0-381,0	
600	9,0	143,0-163,0	T 14,0 (21,0)	138,0- 168,0	-
200	9,0	71,0-91,0	14,0 (21,0)	66,0-96,0	
1080	-	C, Sp. 2	8,0 (12,0)	C, Sp. 2	ļ
380			8,0	į	1
I]				
		Ì			

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated Control lever deflection degrees	mm min 1	Control- rod travel mm min ¹ 3	Medium ra Control lever flection degrees 4	min '	ed Control- rod travel mm 6	Lower rat Control lever de- flection degrees 7	ed speed min ' 8	Control- rod travel mm	Torqu min ' 10	e control Control- rod travel mm
max. ca. 58	500 1100 1130 1200 1250 1350	23,5-24,0 19,0-19,5 15,0-18,0 6,2-12,4 0 - 7,8 0 - 1,0	Silue		1100 1180	0,4-1,6	250 375	12,0-14,0	700 1000	21,7-22, 20,9-21, 19,5-20, 19,0-19,
Torque conti	ol trave	0,8	+· 0,05	J	Speed regu	ilation: At 11	20-11	30 mirem le	ss con	trol rod travel

Torque control travel a = C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever I temperature 40°)	Control red stop	Fuel-delivery characteristics		Starting fuel# delivery		
min '	cm³/1000 strokes	min ¹ 3	min ¹ 4	cm³/1000 strokes 5	min ' 6	cm³/1000 strokes 7	
1080	232,0-236,0 (229,0-239,0)	1220 RW max. 5 mm	900 700 500	228,0-236,0 (224,0-240,0) 228,0-236,0 (224,0-240,0) 216,0-224,0 (212,0-228,0)	375	18,0-18,2 mm RW Butée de ralenti 53,0-58,0	

Checking values in brackets

06.84

67

Limit the quantity at the exess-fuel stop.

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 KHD 13,8 b

1. Edition

En

PE 6 P 100/420 LS 89

RSV 250-1000 P 7/312 R

supersede == company KHD

Komb.-Nr. 0 401 876 058

engine F6 M 716

Note VDT-I-401/ 103

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0-2,1(1.95-2.15)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ^{-/} 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	12,0	12,4-13,2	0,5			
600 600 600 200	9,0 12,0 15,0 9,0	5,4-6,4 11,4-12,7 17,5-18,8 3,6-4,6				

Adjust the fuel delivery from each outlet according to the values in \Box

B. Governor Settings

11 1	r rated speed Control rod travel mm		Interme	diate rate	d speed	Control- lever deflection in degrees 7	Lowe rev/min 8	rated speed Control rod travel mm	3 to	rque control Control rod travel mm 11
ca. 68	1000 1050 1080	16,0 9,0 4,0	witho	out au	xiliar	ca. 28 v spring	300 100 300	6,0 19-21 5,7-6,3	980 450 340	0 0 1,2-1,8
29	1050 1100 1180	7,0-10,0 1,5-3,8 0-1,0	with	auxil	iary s	pring	350 450	3,2-4,5 0-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F)	Rotational- speed limitat Note changed to) rev/min		aracteristics	Starting f Idle rev/min	uel delivery 5		Control rod travel mm
<u>'</u>	2	3	4	5	6	7	8	9
Take	from VDT-I-401/	103		·	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.84

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WPP 001/4 IHC 3,9a 9

4 · Edition

En

VA 4/100 H 1050 BR 12

0 460 304 048 BR 12-3 · 0 460 304 049

BR 12-7 0 460 304 142

supersede6.82 company IHC **XDD 239**

DHK:1 688 901 020

Testoil-ISO 4113

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

Charge-air press | Difference in delivery kp/cm² | cm³ **Settings** rev/min 1. Settings 8,1-9,1 600 1.1 Timing device travel 4,5-5,0 600 kp/cm² 1.2 Supply pump pressure 2,5 64,0-65,0 800 cm³/1000 strokes 1.3 Full-load delivery without charge air pressure __ cm³/1000 strokes Fuli load delivery with charge-air 3,0 pressure 17,5-23,5 250 cm¹/1000 strokes 1.4. Idle speed regulation mind. 85 100 cm³/1000 strokes 15 Start 41,0-49,0 1100 cm³/1000 strokes 1.6 Full load speed regulation

2. Test Sp	ecificat	Ons Checking values in brackets 150-300	600	830-980
2.1 Timing device	rev/min	Beginn	(7,8-9,4)	13,7-14,4 (13,4-14,7)
2.2 Supply pump	rev/min kp/cm²	100 1,6-2,1 (1,4-2,3)	600 (4,2-5,2)	1050 6,2-6,7 (6,0-6,9)
Overflow delivery	rev/min cm 1/10 s	500 mind. 25		1000 55-125 (40-140)

23	Fuel	deliveries

Speed control lever	Delivery lever	rev/min	cm³/1000 strokes		Charge air pressure kp/cm.
End stop	Full	1110-1160	0		
		1100		(40,0-50,0)	
		1030	66,0-69,0	(65,0-70,0)	
		800 500	57 0_60 O	(63,5-65,5) (56,0-61,0)	
				,	
	Stop	1050	0		
Idle stop	Full	310-360	0		
		250		(16,5-24,5)	
	Start	100	mind. 85		
End stop		mind. 150			

Angle to the stop-plate	Pre-setting dimensions
Pump a = 25 ± 4° b = 40 ± 8° c = 30 - 8° d = 60 ± 8°	Pump Dimension IV = 0,5 mm Dimension V = - mm Maß I = 7,0 mm Maß II = 14,0 mm Maß III = 35,8 mm

46

WPP 001/4 IHC 3,5 e 6

1. Edition

017 O078

20

VA 4/100 H 1200 CR 12-11 O 460 304 204 DHK: 1 688 901 020 supersedes IHC company D 206 engine

Pre stroke setting 0,5 mm ± 0,02(0,04)
Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge air press kp/cm	Difference in delivery cm ³
1 1 Timing device travel	800	2,5-3,5	mm		
1.2 Supply pump pressure	800	4,5-5,0	kp/cm²		}
1.3 Full load delivery without	800	61,5-62,5	cm³/1000 strokes		
charge air pressure	-		cm³/1000 strokes		
Full load delivery with charge air pressure	370	12,0-18,0	cm³/1000 strokes		
1.4 Idle speed regulation	100	min. 90	cm ³ /1000 strokes		
1.5 Start	1300	21,0-29,0	•		
1.6 Full-load speed regulation	,500	2.,5 25,5	cm ³ /1000 strokes		

2. Test Sp	rev/min	1350_500 60	0	800	1020-1170
	mm	Beginn 0,9-1,9	[0,6-2,2)	(2,2-3,8)	4,7-5,4(4,4-5,7)
2 2 Supply pump	rev/min	200	800 (4,3-5,	2) 6.1-6	1200 ,6(5,9-6,8)
	kp/cm ⁻	1,4-1,5(1,2-2,1)	(. , 0 0 ,	_,	,,,,,
Overflow delivery	rev/min	500		EE 40	1200 0(40-110)
	cm ³ /10 s	55-100(40-110)		33-10	0(40-110)

Delivery lever	rev/min	cm 11000 strokes	Charge air pressure kp/cm
Full	1330-1380	0	
	1300	21,0-29,0 (20,0-30,0))
	1170	66,5-69,5 (65,5-70,5	5)
	800	(60,0-63,0	0)
	500	54,5-57,5 (53,5-58,5	5)
Stop	1200	0	
Full	420-500	0	
	370	(11,0-19,	0)
	100	min. 90	
	Full	Full 1330-1380 1300 1170 800 500 Stop 1200 Full 420-500 370	Total 1330-1380 0 1300 21,0-29,0 (20,0-30,0 1170 66,5-69,5 (65,5-70,5 60,0-63,0 1200 0

8.84

Angle to the stop plate	Pre-setting dimensions
Pump $a = 25 \pm 4^{\circ}$ $B = 40 \pm 8^{\circ}$ $A = 30 - 8^{\circ}$ $A = 60 + 8^{\circ}$	Pump Dimension ₹ 2.0 mm Dimension ₹ 24,65 mm

WPP 001/4 IHC 5,8m 1

2. Edition

estoil-ISO 4113

VA 6/10 H 1100 CR 87-2 0 460 306 248

DHK 1 688 901 020 / 172+3 bar

supersed 10.79 companyHC engine D 358

All test specifications are valid for -**Bosch Fuel Injection Pump Test Benches** and Testers Test Intructions and Test Equipment **VDT-WPP 161/4 B**

Pre-setting see reverse side

Pre-stroke setting of the pointer at a stroke of 1 mm in relation to outlet "A".

1. Settings	rev/min	Settings		Charge air press kp/cm	Difference in deliver
1 1 Timing device travel	700	3, 8-4, 6	mm		
1 2 Supply pump pressure	700	4,8-5,3	kp/cm²		
1.3 Full load delivery without charge air pressure	800	67,5-68,5	cm ³ /1000 strokes		2,5
Full load delivery with charge air pressure			cm ³ /1000 strokes	•	
t 4 Idle speed regulation	400	9,5-15,5	cm³/1000 strokes		3,0
1 5 Start 196 bar	100	mind. 80, 0	cm³/1000 strokes		
1.6 Full-load speed regulation	1150	33,5-41,5	cm³/1000 strokes		

2 1 Timing device	rev/min	400	700	800-950
	mm	0,8-1,8 (0,5-2,1)	(3,5-4,9)	5,2-5,9 (4,9-6,2)
2 2 Supply pump	rev/min	200	700	1100
	kp/cm ^{-/}	2,2-2,7 (2,0-2,9)	(4,6-5,5)	6,2-6,7 (6,0-6,9)
Overflow delivery	rev/min	500		1100
	cm1/10 s	55-100 (40-110)		55-100 (40-110)

23 Fuel deliveries				1
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes	Charge-air pressure kp/cm
End stop	Full	1190-1240 (1170-1260) 1150 1050 800 500	0 (32,5-42, 68,0-71,0 (67,0-72, (67,0-69, 66,0-70,0 (65,0-71,	, 0) , 0)
٠.				
	Stop	1100	0	
idle stop	Full	480-530 (460-550) 400	0 (8,5-16,5	5)
	Start	100	mind.80,0	
End stop	1	220-320		

Angle to the stop-plate	Pre-setting dimensions
Pump " = 25 ± 4° β = 40 ± 8° = 30 - 8° δ = 60 ± 8°	Pump Dimension IV = 3,00 mm = 24,65 mm

WPP 001/4 IHC 4,4 p 1. Edition

En

500 SO 413

VA 4/11 H 1200 CR 93-3 0 460 314 047 048 DHK: 1 688 901 020

2. Test Specifications

supersedes companyIHC engine D 268

Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge air press kp/cm	Difference in delivery
1 1 Timing device travel	700	5,0-5,8	mm		
2 Supply pump pressure	700	4,7-5,2	kp/cm²		
1.3 Full load delivery without	800	80,0-81,0	cm ³ /1000 strokes		3,0
charge air pressure Full load delivery with charge air	-		cm ³ /1000 strokes		
pressure 1.4. Idle speed regulation	350	14,0-20,0	cm³/1000 strokes		3,0
1.5 Start	100	min. 95	cm³/1000 strokes		
t 6 Full load speed regulation	1250	41,0-49,0	cm³/1000 strokes		

Checking values in brackets

2. Test Sp 2.1 Timing device	rev/min mm	1 400	-2,0)	7 (4,7	(00 (-6,1)	6,1-	800 6,8(5,8-7,1)
2.2 Supply pump	rev/min kp/cm	200 1,7-2,2(1,5	-2,4)	(4,5	(00 (-5,4)	6,3-	1100 6,8(6,1-7,0)
Overflow delivery	rev/min cm*/10 s	500 55-100(40-	110)		120 55-100		0)
2.3 Fuel deliveries							
Speed control lever	Delivery lever	rev/min	cm 1/10	00 strokes			Charge-air pressure kp/cm ²
End stop	Full	1290-1350	þ				
		1250			(40,0-	50,0)	
		1100	85,0-	88,0	(84,0-	89,0)	
		800			(79,5-	-81,5)	
		500	78,5-	81,5	(77,5-	-82,5)	
	Stop	1200	•				
tdle stop	Full	420-470	•				
		350			(13,0	-21,0)	
	Start	100 220-340	min.	95			

Angle to the stop-plate	Pre-setting dimensions
Pump " = 25 ± 4° " = 36 ± 8° " = 30 - 8° " = 60 + 8°	Pump Dimension 1,6 mm Dimension 24,65 mm

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WPP 001/4 SAV 5,2 a 6

2. Edition

の言語のの語の物質

VA 6/100 H 1450 CR 124-3 0 460 306 139

supersedes
company Saviem
797-10 LKW SM 8 T

Setting of the pointer at a stroke of 0,3 mm in relation to outlet "A".

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge air press kp/cm²	Difference in delivery cm ³
1 1 Timing device travel	1100	3,9-4,7	mm		
1.2 Supply pump pressure	1100	5,9-6,4	kp/cm²		
1.3 Full load delivery without	900	59,5-60,5	cm³/1000 strokes		3,0
charge air pressure Full load delivery with charge air	-	-	cm ³ /1000 strokes		
pressure 1.4 Idle speed regulation	300	7,0-13,0	cm³/1000 strokes		2,5
1.5 Start	100	mind.80,0	cm³/1000 strokes		
1.6 Full load speed regulation	1600	13,0-19,0	cm³/1000 strokes		

2. Test Sp	ecificatio	ns Checking val	lues in bracket	s 1100		1450
2.1 Timing device	rev/min mm	0,4-1,4(0,2	-1,6)	(3,6-5,0)	7,0	-7,7(6,6-8,0)
2.2 Supply pump	rev/min kp/cm ⁻	200 1,3-1,8(1,1	-2,0)	1100 (5,7-6,6)	7,3	1450 -7,8(7,1-8,0)
Overflow delivery	rev/min cm ¹ /10 s	500 55-100(40-1	10)		. 55	1450 -100(40-110)
23 Fuel deliveries						
Speed control lever	Delivery lever	rev/min	cm 1/1000	strokes	10	Charge air pressure kp/cm ²
End stop	Fuil	1600-1700 1600 1500 1400 900 500	159.0-6	(12,0- 9,0 (52,0- 2,0 (58,0- (59,0- 9,0 (54,0-	-63.0)	
	Stop	1400	0		÷	
Idle stop	Full	350-450 300	0	(6,0-	-14,0)	
End stop	Start	100 150-250	mind.	80,0		

Angle to the stop-plate	Pre-setting dimensions		
Pump " = 25 ± 4° " = 55 ± 8° " = 30 - 8° " = 60 ± 8°	Pump Dimension (\$\overline{\tau} = 5,6 mm Dimension \(\nabla = 24,6 mm \)		

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WPP 001/4 STE 4,0e

4. Edition

VA 4/90 H 1200 CR 144-2 0 460 394 042 supersedes companySteyr
engine WD 411.41

Pre-setting see reverse side

Pre-stroke setting 0,3 mm \pm 0,02 (\pm 0,04)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery
1.1 Timing device travel	1000	3,9-4,7	mm		
1 2 Supply pump pressure	1000	5,1-5,6	kp/cm²	ļ	
1.3 Full load delivery without charge-air pressure	900	55,5-57,5	cm ¹ /1000 strokes		2,5
Full load delivery with charge air pressure			cm ¹ /1000 strokes		
1.4 Idle speed regulation	300	13,0-19,0	cm ³ /1000 strokes		3,0
1 5 Start	100	mind. 70, 0	cm³/1000 strokes		
1.6 Full load speed regulation	1280	23, 0-31, 0	cm ³ /1000 strokes		

2. Test Sp	ecificat	ions Checking values in bracket	s	4000
2.1 Timing device	rev/min	700	1000	1200
	mm	0,8-1,8(0,5-2,1)	(3,6-5,0)	5,8-6,6(5,5-6,9)
2.2 Supply pump	rev/min	200	1000	1200
	kn/cm	1,2-1,7(1,0-1,9)	(4,9-5,8)	6,0-6,5(5,8-6,7)
Overflow delivery	rev/min	500		1200
	cm 1/10 s	55-100(40-110)		55-100(40-110)

23 Fuel deliveries

Speed control lever	Delivery lever	rev/min	cm 1/1000 stroke	s	Charge-air pressure kp/cm.
End stop	Full	1330-1380	0		
		1280		(22,0-32,0)	
		1150	59,5-60,5	(59,0-61,0)	
		900		(54, 5-58, 5)	
		500	48,5-51,5	(47,5-52,5)	
	Stop	1200	0		
idle stop	Full	420-470	0		
		300		(12,0-20,0)	
	Start	100	mind. 70, 0		
End stop		170-250			

WPP 001/4 STE 3,1a

3. Edition

En

Esson-160 di13

VA 4/100 H 1200 CR 145-4 0 460 304 237

supersedes companySteyr engine WD 408.43

Pre Stroke setting 0, 3 mm \pm 0, 02 (\pm 0, 04)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B

			Pr	e-setting see rever	se side
1. Settings	rev/min	Settings		Charge air press kp/cm ²	Difference in delivery cm.
1.1 Timing device travel	1000	3,4-4,2	mm		
1.2 Supply pump pressure	1000	4,7-5,2	kp/cm²		
1.3 Full load delivery without charge air pressure	1180	65,0-66,0	cm³/1000 strokes		2,5
Full load delivery with charge air			cm ³ /1000 strokes]	
pressure 1.4. little speed regulation	250	12,0-18,0	cm³/1000 strokes		3,0
15 Start	100	mind.80,0	cm ³ /1000 strokes		
1.6. Full toad speed regulation	1270	36,0-44,0	cm ¹ /1000 strokes		

2. Test Sp	ecificat	ions Checking values in brackets	;	
2.1 Timing device	rev/min	480-630(450-660)	1000	1140-1300
	mm	Beginn	(3,1-4,5)	5,1-5,8(4,8-6,1)
2.2 Supply pump	rev/min	200	1000	1200
	kp/cm ²	1,2-1,7(1,0-1,9)	(4,5-5,4)	5,5-6,0(5,3-6,2)
Overtlow delivery	rev/min	500		1200
	cm'/10 s	55-100(40-110)		55-100(40-110)

2.3	Fuel	deliv	eries
-----	------	-------	-------

Speed control lever	Delivery lever	rev/min	cm ¹ /1000 strokes	•	Charge air pressure kp/cm
End stop	Full	1320-1370	0		
		1270		(35,0-45,0)	
		1180		(64,5-66,5)	
		900	69,0-71,0	(68,0-72,0)	
		500	62,0-65,0	(61,0-66,0)	
	Stop	1200	0		
idle stop	Full	330-380	0		
		250		(11,0-19,0)	
	Start	100	mind.80,0		
End stop		170-250			

Angle to the slop-plate	Pre-setting dimensions .
Pump $a = 25 \pm 4^{\circ}$ $a = 40 \pm 8^{\circ}$ $a = 30 - 8^{\circ}$ $a = 60 + 8^{\circ}$	Pump Dimension 1♥ 3,40 mm Dimension v 24,65 mm

WPP 001/4 STE 4,0d

4. Edition

En

stoil-ISO 4113

VA 4/10 H 1200 CR 145-5 0 460 304 246

Pre-stroke setting

supersedes = companySteyr engine WD 411.85

 $0.3 \text{ mm} \pm 0.02 (\pm 0.04)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers Test Intructions and Test Equipment VDT WPP 161/4 B

Pre-setting see reverse side

1. Settings	rev/min	Settings		Charge air press kp/cm ²	Difference in delivery cm '
† 1 Timing device travel	1000	5,7-6,5	mm		
1.2 Supply pump pressure	1000	5,0-5,5	kp/cm²		
1.3 Full toad delivery without charge air pressure	1180	68,0-69,0	cm 1/1000 strokes		2,5
Full load delivery with charge air			cm 1/1000 strokes		
pressure 1.4 Idle speed regulation	350	10,0-16,0	cm ³ /1000 strokes	[]	3,0
1 5 Start	100	mind. 70,0	cm 1/1000 strokes		
1.6 Full load speed regulation	1280	31,0-39,0	cm ¹ /1000 strokes		

2. Test Sp	ecificat	ions Checking values in brackets		
2.1 Timing device	rev/min	į 600	1000	1200
-	mm	1,4-2,2(1,1-2,5)	(5,4-6,8)	7,7-8,4(7,3-8,7)
2.2 Supply nump	rey/min	200	1000	1200
	kp/cm	1,1-1,6(0,9-1,8)	(4,8-5,7)	5,8-6,3(5,6-6,5)
Overflow delivery	rev/min	500		1200
·	cm ⁴ /10 s	55-100(40-110)		55-100(40-110)

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	3	Charge air pressure kp/cm
End step	Full	1330-1380	0		
		1280 1180 1000 500	71,5-73,5 62,5-65,5	(30,0-40,0) (67,5-69,5) (70,5-74,5) (61,5-66,5)	
	Stop	1200	0		
die stop	Full	470-530	0		
		350		(9,0-17,0)	
	Start	100	mind. 70, 0		
End stop		170-250			

Angle to the stop-plate	Pre-setting dimensions
Pump " = 25 ± 4° " = 36 ± 8° " = 30 - 8° " = 60 + 8°	Pump Dimension I ← 4,00 mm Dimension V= 24,65 mm

WPP 001/4 PEU 2,1 d 3. Edition

EP/VA 4/90 H 2250 CR 173 (Z)

173 - 1 (Z) 173 - 2 (Z)

supersedes 4.78

engine

Peugeot company XD 4/90

Quiet-running device (see VDT-WPP 161/4, Suppl. 1)

1. Edition

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Test Intructions and Test Equipment VDT-WPP 161/4 B

Pre-setting see reverse side

Pre-stroke setting

mm

2	
41	
C	
$\overline{\mathcal{V}}$	
<u>+</u>	
	I
73	1

1. Settings	rev/min	Settings		Charge-air press	Difference in delivery cm ³
1.1 Timing device travel	2000	5,3-5,7	mm		
1.2 Supply pump pressure	2000	5,6-6,1	kp/cm ²		
1.3 Full-load delivery without charge-air pressure	1400	36,0-37,0	cm ³ /1000 strokes		1,5
Full-load delivery with charge-air pressure	-	. -	cm ³ /1000 strokes	ļ	
1.4 idle speed regulation	320	10,0-14,0	cm ³ /1000 strokes	į	3,0
1 5 Start	50	60-100	cm ³ /1000 strokes		
1.6 Full-load spized regulation	2310	17,0-23,0	cm ³ /1000 strokes		

2. Test Sp	ecificati	ONS Checking values in brackets	
2.1 Timing device	rev/min	1000 1600	2200-2400(2170-2430)
	mm	0,6-1,6(0,3-1,9) 3,0-4,0(2,7-4,3)	end (6,9-7,6)
22 Supply pump	rev/min	200	2000
	kp/cm²	1,0-1,5(0,8-1,7)	(5,4-6,3)
Overflow delivery	rev/min	500	2150
	cm ³ /10 s	70-140(60-150	70-140(60-150)

23	Fuel	delive	eries

Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/cm²
End stop	Full	2330-2370		
		0040	10,0	
		2310	17,0-23,0 (15,0-25,0)	
		2150	32,7-35,7 (31,7-36,7)	
		1400	(35,5-37,5)	
		800	28,5-31,5 (27,5-32,5)	
		500	31,1-34,1 (30,0-35,0)	
	Stop	2250	0	
Idle stop	Full	430-570	0	
		320	(8,0-16,0)	
	Start	50	(50-120)	
		300	max.31,0	<u> </u>

Pump a = 50 + 4° B = 52 + 5° b = max 50° Pump Dimension 25,0 Dimension 25,0	
h =max 568	

173-1 Test as 173, but play between lever 173-2 and stop for increased idle = 5.5 - 2.0 mm.

WPP 001/4 PER 5,8 o 1. Edition

VA6/11H 1300 CL 179-2

0 460 316 038

DHK: 1688 901 020

supersedes Perkins company 16 354

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

estroke setting 0,3 mm = 2 tring of the pointer elation to outlet "A".	0,02(0,04 at a strok	and Testers Test Intructions and Test Equipment VDT-WPP 161/4 B Pre-setting see reverse side			
1. Settings	fev/min	Settings		Charge-air press kp/cm²	Difference in deliver cm ³
1 1 Timing device travel	500	4,4-5,0	ពាហា	0	
1 2 Supply pump pressure	500	4,5-5,0	kp/cm²	0	
1.3 Full load delivery without	500	80,0-81,0	cm³/1000 strokes	0	
charge air pressure Full load delivery with charge air	1300	96,0-97,0	cm ³ /1000 strokes	0,7	
pressure 1.4 Idle speed regulation	250 100	19,0-25,0 min. 100	cm³/1000 strokes	0	
1 5 Start		*	cm ³ /1000 strokes		
1.6 Full load speed regulation	1550	36,0-44,0	cm ³ /1000 strokes	0,7	

2. Test Sp	ecificatio	NS Checki 3910 lu	es in brackets 500	650 680-780
2 1 Timing device	rev/min mm	1,0-2,0(0,7	-2,3) (4,1-5,3)	6,0-7,0 (5,7-7,3)7,0-7,7 (6,7-8,0)
2 2 Supply pump Overflow delivery	rev/min kp/cm² rev/min cm¹/10 s	200 2,5-3,0(2,3 500 55-100 (40	500 (4,3-5,2)	1300
23 Fuel deliveries				
Speed control tever	Delivery lever	rev/min	cm³/1000 strokes	Charge air pressure kp/cm ²
End stop	Full	1600 1550 1300 1100 500 500	max. 15,0 (35,0- (95,5- 93,5-95,5(92,5- 84,5-88,5(83,5- (79,5-	97,5) 0,7 96,5) 0,7
	Stop	1300	0	
idle stop	Full	330.380 250	(18,0-26,	0)
	Start	100 100-200	min. 100	

#3

Angle to the stop-plate	Pre-setting dimensions
Pump α = 25 ± 4° β = 55 ± 8° γ = 30 - 8° δ = 60 + 8°	Pump Dimension IV Dimension V= 25,0000

LDA

Start of timing advance 0,13 - 0,26 bar

End of timing advance 0,31 - 0,37 bar

2. Test Specifications Checking values in brackets

WPP 001/4 IHC 5,8 V 7

1. Edition

VA 6/10 H 1100 CR 401-3

0 460 306 262

DHK: 1 688 901 020

supersedes compan**J**HC engine D 358/956

See VDT-WJP 161/4, Suppl. 1) Setting of the pointer at a stroke of 1 mm in

and Testers **Test Intructions and Test Equipment**

All test specifications are valid for Bosch Fuel Injection Pump Test Benches

VDT-WPP 161/4 B

lation to outlet "A". 1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in deliver cm ³
1 1 Timing device travel	800	2,4-3,0	mm	;	
1.2 Supply pump pressure	800	5,0-5,6	kp/cm²	;	
Full foad delivery without charge air pressure	800	67,2-68,2	cm³/1000 strokes]	3,0
Full-load delivery with charge a pressure	-	-	cm ³ /1000 strokes		
1 4 Idle speed regulation	350	15,0-21,0	cm³/1000 strokes	ĺ	2,5
1 5 Start	100	nin. 80	cm³/1000 strokes	·	
1.6 Full load speed regulation	1150	34,0-40,0	cm³/1000 strokes		

2.1 Timing device	rev/min	600	800 1000	1100
	mm	0,8-1,6(0,5-1	1,9) (2,0-3,4) 3,7-4,3(3	1100 3,3-4,7) 3,8-4,5(3,5-4,8)
2 2 Supply pump	rev/min	200	800 110	00
	kp/cm²	1,7-2,3(1,5-2	2,5) (4,8-5,8) 5,9-6,5	(5,7-6,7)
Overflow delivery	rev/min	500 55-100(40-1	110 10) 55-100()0 (40–110)
23 Fuel deliveries	1	1		
Speed control lever	Delivery lever	rev/min	cm³/1000 strokes	Charge-air pressure kp/cm²
End stop	Full	1190-1240 1150 1080 800 500	0 (33,0-41,0) 65,5-68,5 (64,5-69,5) (66,7-68,7) 67,0-70 (66,0-71,0)	
	Stop	1100	0	
Idle stop	Full	520-580 350	0 (14,0-22,0)	·
	Start	100	min. 80	
nd stop		260-360		

Angle to the stop-plate	Pre-setting dimensions	
Pump a = 25 ± 4° b = 45 ± 8° c = 30 - 8° c = 50 + 8°	Pump Dimension I♥ 3,0 mm Dimension V= 24,65 mm	

WPP 001/4 IHC 5,8 V 6

1. Edition

VA 6/10 H 1150 CR 401-4

2 Test Specifications

0 460 306 264

DHK: 1 688 901 020

supersedes...

company IHC

D 358/1056

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-setting see reverse side

Prestrake setting 0 See VDT-WJP 161/4, Suppl. 1) Setting of the pointer at a stroke of 1 mm in relation to outlet "A".

1. Settings	rev/min	Settings		Charge-air press kp/cm ²	Difference in delivery cm ³
1 1 Timing device travel	800	2,4-3,0	mm		
1.2 Supply pump pressure	800	4,8-5,4	kp/cm²		
1.3 Full-load delivery without charge-air pressure	800	70,5-71,5	cm³/1000 strakes		3,0
Full-load delivery with charge-air	-	-	cm ³ /1000 strokes		
pressure 1.4. Idle speed regulation	350	15,0-21,0	cm ³ /1000 strokes		2,5
1 5 Start	100	min. 80	cm ³ /1000 strokes		
1.6 Full-load speed regulation	1200	38,5-44,5	cm ³ /1000 strokes		

Checking values in brackets

z. rest 5p	ecincano		ues in brackers	
2.1 Timing device	rev/min	600	800 100	00 1150 (3,3-4,7) 3,8-4,5(3,4-4,8)
	mm	0,9-1,/(0,6-	2,0) (2,0-3,4) 3,7-4,3	(3,3-4,7) 3,8-4,5(3,4-4,8)
2 2 Supply pump	rev/min	200	800 2,5) (4,6-5,6) 6,0-6	1150
	kp/cm²	1,7-2,3(1,5-	2,5) (4,6-5,6) 6,0-6	,6(5,8-6,8)
0 1 - 4-1		500	1150	
Overflow delivery	rev/min cm³/10 s	55-100(40-11		110)
23 Fuel deliveries		•	1 1	Charge-air pressure kp/cm²
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes	Charge-air pressure kp/Ciii
End stop	Full	1240-1300 1200 1130	0 (37,5-45,5 70,0-73,0 (69,0-74,0)
		800	(70.0-72.0	'
		500	(70,0-72,0 71,5-74,5 (70,5-76,0)
		4450		
	Stop	1150	0	
Idle stop	Full	510-570	0	
·		350	(14,0-22,0)
	Start	100	min. 80	
End stop		260-360		

Angle to the stop-plate	Pre-setting dimensions
Pump " = 25 ± 4° B = 40 ± 4° 1 = 30 - 8° 2 = 60 + 8°	Pump Dimension V 2,8 mm = 24,65 mm Dimension V

WPP 001/4 Volvo 3,6 n

2. Edition

supersedes Volvo

company: TD 40 A (93 kW) engine:

0 460 416 027

VE 6/11 F 1800 L 18-3

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers 0.3 - 0.02 (0.04)

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
A 4 Timing devices tenuel	1500	3,6-4,0	mm	0,75	
1 1 Timing device travel	1500	6,6-7,2	bar (kgf/cm²)	0,75	
1 2 Supply-pump pressure	500	43,5-45,5	cm ⁹ /1000 strokes	0	2,5(3,0)
1 3 Full-load delivery with charge-air pressure	1500	62,0-63,0	cm³/1000 strokes	0,75	
Full-load delivery without charge-air pressure	325	8,0-12,0	cm ³ /1000 strokes	0	
1 4 Idle regulation	100	min. 60,0	cm ³ /1000 strokes	0	
1.5 Full-speed regulation	2000	19,0-25,0	cm ³ /1000 strokes	0,75	
1 6 Start	_				
1.7 Load-dependent port-closing					

Overflow temperature 45° C

2. Test Spec	ifications	checking values in brackets ()		
2 1 Timing device	n = rev/min	1100	1500	1800
LDA=0.75 bar	mm	1,6-2,4(1,3-2,7)	(3,1-4,5)	4,5-5,3 (4,2-5,6)
2 2 Supply pump	n = rev/min	400	•	1800
LDA=0,75 bar	bar (kgf/cm²)	2.8-3.4		7,7-8,3
Overflow delivery	n = rev/min	500		1800
	cm ³ /10 s	55-138 (40-153)		55-138 (40-153)

Overflow delivery	n = rev/min	50	1800			
	cm ³ /10 s	55-138	(40-153)		55-138	(40-153)
2 3 Fuel deliveries					3. Dimer	18i0n8 for assembly and adjustment
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²)	Designation	mm
End stop	2100 2000 1900 1800 1500 *500	56,3-59,3	(17,0-27,0) (39,0-49,0) (55,55-60,05 (60,25-64,75 (48,25-53,75 (41,75-47,25	0,75 0,23	K KF MS SVS	5,9-6,2 1,2-1,4 max. 4,7
switch-off					AXK B	20.2-22,2
idle stop	400 325 110 220	max. 3,0 min. 60 max. 40	(6,0-14,0)		*Manifold-pressure compensator stroke	
2 4 Solenoid	max. cut-in vol				= 4,0 n	

WPP001/4 VMA 2,0 d 1. Edition

VE 4/9 F 2150 L31-1

Overflow temperature 45° C

company: Motori VM HR 488 HT engine:

0 460 494 133

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

mm Pre-stroke setting

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1900 1900	6,4-6,8 5,7-6,3	mm bar (kgf/cm²)	0,8 0,8	
1.2 Supply-pump pressure	1600	46,5-47,5	cm ³ /1000 strokes	0,8	3,0
1 3 Full-load delivery with charge-air pressure Full-load delivery without	1600	34,5-35,5	cm³/1000 strokes	0	
charge air pressure 1.4 Idle regulation	400	8,0-12,0	cm ³ /1000 strokes	0	3,0
1.5 Full speed regulation	2300	27,5-33,5	cm ³ /1000 strokes	0,8	
1 6 Start	100	min. 44,0	cm ³ /1000 strokes	0	}
1 7 Load dependent port closing	_				

z. iest Spe	cifications	checking values in brackets ()	1900 2150
2 1 Timing device	n = rev/min mm	1,3-2,1(1,0-2,4)	(5,9-7,3) 7,5-8,3 (7,2-8,6)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,0-2,6	2150 6,3-6,9
Overflow delivery	n = rev/min cm ^{1/10} s		

	cm1/10 s					
2 3 Fuel deliveries	. !	L		3. Dimensions for assembly and adjustment		
Speed control lever	Rot speed rev/min	Fuel delivery cm³/1000 strokes	Charge-air press bar (kgf/cm²)	Designation	mm	
End stop	2600 2450 2300 2150 1600 * 600	max.2,0 max. 10,0 (26,5-34,5) 40,0-43,0 (39,2-43,8) (44,7-49,3) (32,7-37,3) 38,3-41,3 (36,8-42,8)	0,8 0,8 0,8 0,8 0,8	K KF MS SVS	3,3 5,7-5,9 0,7-0,9 5,6	
switch-off	600	30,5-33,5 (29,0-35,0)	0	A B		
Idle stop	800 500 400 350 450	max. 2,0 max. 6,0 (6,0-14,0) min. 44 max. 43		İ	old-pressure sator stroke mm	
2.4 Solenoid	max cut in vol	tage xxx min. 10 V cx rated voltage 12V.				

BOSCH

8.84

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THE OSPICE

Test Specifications Distributor-type Fuel-injection Pumps 46

WPP 001/FIA 1,7a

5. Edition

Overflow temperature 45° C

supersedes 9.83

VE 4/9 F 2300 R 54 0 460 494 044

company: Fiat x8/28

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting mm see VDT-W-460/...

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1500	4,3-4,7	mm		
1 2 Supply-pump pressure	1500	5,1-5,7	bar (kgf/cm²)		
1 3 Full-load delivery with charge-air pressure			cm ³ /1000 strokes		
Full-load delivery without	1500	34,2 - 35,2	cm ³ /1000 strokes		2,5 (3,0)
charge air pressure 1 4 Idle regulation	350	8,0-12,0	cm ³ /1000 strokes		2,5 (3,0)
1 5 Full-speed regulation	2400	16,0-22,0	cm ³ /1000 strokes		
1 6 Start	100	min. 48	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	1500	-			

2. Test Spe	ecifications	checking values in brackets ()	
2.1 Timing device	n = rev/min mm	800 1,7-2,5 (1,4-2,8)	1500 (3,8-5,2)	2300 7,2-8,0 (6,9-8,3)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,5-3,1		2300 6,9-7,5
Overflow delivery	n = rev/min cm ³ /10 s	400 55-138(40-153)		2300 55-138(40-153)
	L			Dimensione

	cm ³ /10 s	55-138(40-153)		33-130	5(40-133)
2 3 Fuel deliveries	L			3. Dimer	for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes	Charge air press bar (kgf/cm²)	Designation	
End stop	2500	4,5-10,5 (3,5-11,5)		K	3,2-3,4
	2400	(15,0-23,0)		KF	5,7-5,9
	2250	28,0-30,0(26,7-31,3)		MS	1,7-1,9
	1500	(32,4-37,0)		svs	max. 3,5
	600	23,5-26,5(22,0-28,0)			
switch-off				XAK	20,1-22,1
Switch C.	2300	0		XBL	9,5-13,3
Idle stop	350	(6,0-14,0)		Observations	•
	400	max. 4,0			
	540	0			
2.4 Solenoid	max. cut-in vol				
	test voltage	rated voltage 12V.		<u> </u>	

BOSCH

WPP001/4 MAN 5,6 p 1. Edition

VE6/11F 1100 R55-8

Overflow temperature 45° C

supersedes MAN

company: DO 226 ME engine:

0 460 416 037

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

8.84

±0,02 (0,04)

see VDT-W-460/...

Pre-stroke setting	mm 0,02			see VD1-W-46U/	
1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	700	2,9-3,3	mm	ĺ	
1 2 Supply-pump pressure	700	3,9-4,5	bar (kgf/cm²)		
1.3 Full-load delivery with	-		cm ³ /1000 strokes		j
charge-air pressure Full-load delivery without	700	69,0-70,0	cm ³ /1000 strokes		3,5 (4,0)
charge-air pressure	300	2,5-6,5	cm ³ /1000 strokes		3,0 (4,0)
1 5 Full-speed regulation	1250	19,0-25,0	cm ³ /1000 strokes		
1 6 Start	100	75,0-105,0	cm ³ /1000 strokes		
4.7.1 and demandant port-closing	_	1 .		1	}

2. Test Spe			700	900	. <u></u>
2 1 Timing device	n = rev/min mm	500 0,9-1,7 (0,6-2,0)	700 (2,4-3,8)	4,0-4,8 (3	
2 2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,9-3,5		1100 5,7-6,	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138 (40-153)		1100 55-138(
2 3 Fuel deliveries		<u></u>		3. Dimens	and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	Designation	mm
End stop	1330 1250 1100 900 700 500	max. 1,5 (17,5-26,5) 75,5-78,5(74,4-79,6) 73,5-76,5(72,4-77,6) (66,9-72,1) 64,0-68,0(62,6-69,4)		K KF MS SVS	5,7-5,9 1,2-1,4 2,5
switch-off				A B	
Idle stop	340 300	max. 1,5 (0-9,0)		Observations	
End stop	350 450	min. 80 max. 80			
2.4 Solenoid	max. cut-in voltag	e xx min. 10 V ated voltage 12V.			

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WPP 001/4 IHC 5,8 t

3. Edition

VE 6/12 F 1350 R 64 0 460 426 016

supersed 3.83

Nozzle-and-holder assembly company IHC 1 688 901 020 (172 + 3 bar) engine: D 358/PC 11

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Setting of the pointer at a stroke of 1 mm in see VDT W-460/ mm relation to outlet "A". Pre-stroke setting

1. Settings	Rot speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1150	5,2-5,6	mm		
1 2 Supply pump pressure	1150	5,6-6,2	bar (kgf/cm²)		
3 Full-load delivery without	-	-	cm³/1000 strokes		
charge air pressure Full-load delivery with	1150	84,0-85,0	cm³/1000 strokes		3,5 (4,5)
charge air pressure 1 4 Idle speed regulation	500	14,5-20,5	cm³/1000 strokes		3,5 (4,5)
1 5 Start	1400	44,0-50,0	cm ³ /1000 strokes		
1 6 Full-load speed regulation	100	min.100,0	cm ³ /1000 strokes		
1 7 Load-dependent start of delivery	-	••			

	cifications		1150	1300
1 Timing device	n = fev/min	600	• • - •	5,3-6,1(5,0-6,4)
	mm	1,6-2,4(1,3-2,7)	(4,7-6,1)	5,5-0,1(5,0-0,4)
		400		1300
2 Supply pump	n = rev/min	2,7-3,3		6.0-6.6
	bar (kgf/cm²)	2,7-3,3		0,0 0,0
		500		1350
verflow delivery	n = rev/min	55-138(40-163)		55-138(40-158)
	cm ³ /10 s	33-130(40-103)		00 100(40 100)

2 3 Fuel deliveries			
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)
End stop	1510 1450 1400 1300	max. 1,0 9,0-17,0 (8,0-18,0) (42,0-52,0) 80,0-83,0 (78,5-84,5)	
	1150	(81,5-87,5)	
	800	77,0-81,0 (76,0-82,0)	
	500	63,0-68,0 (61,8-69,2)	
switch-off	1350	0	
Idle stop	570 520 500	max. 1,0 min. 4,0 (12,5-22,5)	
End stop	250 350	min. 100 max. 80	
2 4 Solenoid	max. cut-in volt	ii watad waltada 190	

3. Dimen Designation	SIONS for assembly and adjustment mm
K	3,2-3,4
KF	5,7-5,9
MS	1,0-1,2
svs	max.6,0
e XF	15,8-19,8
Observations	
Ti di	

Testoil-ISO 4113

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 VWW 1.6 h 4. Edition

VE 4/9 F 2250 R 78 0 460 494 062/063

Overflow temperature 45° C

supersedes 11.82 VWW company:

engine:

086T-1,6

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/... mm

Pre-stroke setting	mm			see VDT-W-460/	
1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1500	3,8-4,2	mm	0,75	
1 2 Supply-pump pressure	1500	5,6-6,1	bar (kgf/cm²)	0,75	
1 3 Full-load delivery with	600	23,5-24,5	cm ³ /1000 strokes	0	
charge-air pressure Full-load delivery without	1500	43,5-44,5	cm ³ /1000 strokes	0,75	2,5 (3,0)
charge air pressure 1 4 Idle regulation	475	7,0-11,0	cm³/1000 strokes	0	2,5 (3,0)
1 5 Full-speed regulation	100	min. 38,0	cm ³ /1000 strokes	0	
1 6 Start	2525	9,0-15,0	cm ³ /1000 strokes	0,75	
1.7 Load-dependent port-closing					
					

2. Test Spec	ifications	checking values in brackets ()	
21 Timing device IJDA=(),75 bar	n = rev/min mm	1000 1,8-2,6 (1,5-2,9)	1500 (3,3-4,7)	2250 6,1-6,9 (5,8-7,2)
	n = rev/min bar (kgf/cm²)	600 3,3-3,9		2250 7 ,4- 8,0
Overflow delivery	n = rev/min cm ³ /10 s	55-125 (40-140)		2250 55-125 (40-140)

Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²)
2730-1870 2525 2250 1500 * 1000 600	0 38,5-40,5 33,5-34,5	(8,0-16,0) (37,2-41,8) (41,7-46,3) (31,0-37,0) (21,0-27,0)	0,75 0,75 0,3
2250 400	0		,
1200 475	max. 5,0	(5,0-13,0)	
400 500	min. 22.0 max. 30.0		
	2730-1870 2525 2250 1500 * 1000 600 2250 400 1200 475 400	2730-1870 0 2525 2250 38,5-40,5 1500 * 1000 600 2250 0 400 1200 max. 5,0 475 400 min. 22,0	2730-1870 0 2525 2250 38,5-40,5 (37,2-41,8) 1500 (41,7-46,3) * 1000 600 33,5-34,5 (31,0-37,0) 600 0 1200 max. 5,0 400 min. 22,0

3. Dimen	for assembly
Designation	and adjustment mm
к	3,2-3,4
KF	5,7-5,9
MS	1,2-1,4
svs	4,4
a XK	18,4-20,4
8 XL	10,0-13,6

Manifold-pressure compensator stroke = 4,0 mm Correction at the adjusting nut. (46)

estoil-ISO 4113

Test Specifications Distributor-type Fuel-injection Pumps 46

WPP 001/4 Ope 1,6 d 5. Edition

engine:

cm³/1000 strokes

En

VE 4/9 F 2300 R 82;

VE ...R 82-1

0 460 494 071

1 6 Start

1.7 Load-dependent port-closing

0 460 494 114

100

Overflow temperature 45° C

2.84

supersedes Op

Opel 2033-1,6 l

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

mm

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
•	1500	3,1 - 3,5	mm		
1.1 Timing device travel	1500	5,0 - 5,6	bar (kgf/cm²)		
1.2 Supply-pump pressure					2,5
1.3 Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	1500	28,5-29,5	cm³/1000 strokes		
charge air pressure 1 4 title regulation	450	6,0 - 10,0	cm ³ /100© strokes		2,5
1.5 Full-speed regulation	2785	7,0 - 13,0	cm ^{3/1000} strokes		

min. 40,0

2 1 Timing device	n = rev/min mm	1200 1,4-2,2 (1,1 - 2,5	1500) (2,6 - 4,0)	6,8-7,6 (2300 6,5 - 7,9)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,4 - 3,0		7	2300 ,3 - 7,9
Overflow delivery	n = rev/min cm³/10 s	500 55-138 (40 - 153)		55-13	2300 8 (40 - 153)
2 3 Fuel deliveries Speed control lever	Rot. speed	Fuel delivery	Charge-air press bar (kgf/cm²)	3. Dimens	sions for assembly and adjustment mm
End stop	3000 2785 2625 2300 1500 600	max. 5,0 7,0 - 13,0 (6,0 - 1 (16,0-24 27,4-29,4 (26,1-30 (26,7-31 23,2-26,2 (21,7-27	,0) ,7) ,3)	K KF MS SVS #FH	3,2 - 3,4 5,7 - 5,9 1,2 - 1,4 max. 2,0 1,8-2,4
switch-off	2300	0		A XK	22,3 - 24,3 11,0 - 14,9
Idle stop	1200 650 450 400 500	0 2,0 - 7,0 (0,5-8, (4,0 -1) min. 30 max. 28	5) 2,0)	stro	rating oke (KSB) G-I-460/138
2.4 Solenoid	max. cut-in voits	ge xx min. 10 V			

BOSCH

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8.84

OOT TO YOU

Test Specifications
Distributor-type
Fuel-injection Pumps

40

WPP 001/4 STE 4,0 h

1. Edition

VE 4/11 F 110 OR 94-1 O 460 414 011 Overflow temperature 45° C

supersedes company engine WD 411.89

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting mm

sec VDT-W-460/...

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1000	5,2 - 5,6	mm		
1 2 Supply-pump pressure	1000	5,2 - 5,8	bar (kgf/cm²)		
1 3 Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	1000	73,5 - 74,5	cm³/1000 strokes		3,0 (4,0
charge-air pressure 1 4 Idle regulation	300	11,5- 15,5	cm³/1000 strokes	1	3,0 (4,0
1.5 Full-speed regulation	1150	50,0 - 56,0	cm ³ /1000 strokes		
1 6 Start	100	min. 70	cm ³ /1000 strokes		
1.7 Load-dependent port-closing					

2. Test Spe	ecifications	checking values in brackets ()	
2 1 Timing device	n ⊤ rev/min mm	500 0,8-1,6 (0,5-1,9)	1000 (4,7-6,1)	1100 5,9-6,7 (5,6-7,0)
2 2 Supply pump	n = rev/min bar (kg1/cm²)	500 2,8 - 3,4		1100 5,7 - 6,3
Overflow delivery	n = rev/min cm ³ /10 s			1100 55 - 138 (40-153)
<u> </u>				3. Dimensions

2 3 Fuet deliveries				
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²)
End stop	1270 1200 1150 1080 1000	max. 2,0 72,5-74,5	(20,5-29,5 (48,5-57,5 (70,8-76,2 (71,3-76,7	b
	500	66,0-70,0	(64,6-71,4)
switch-off				
Idle stop	300 340 400	min. 1,5 max. 1,0	(9,0-18,0)	
End stop	170 250	min. 70 max. 65		
2 4 Solenoid	max. cut-in volta	ge		<u> </u>

Designation	for assembly and adjustment
ĸ	3,2-3,
KF	5,2-5,
MS	0,9-1,
svs	4,0
A	
В	

BOSCH

test voltage

Testoil-ISO 4113

Test Specifications Distributor-type Fuel-injection Pumps

VE 4/11 F 1200 R 94-2 (FD 442)

WPP 001/4 STE 4,0 K 1. Edition

supersedes

Steyr company:

WD 411.45

engine:

47 kW

All test specifications are valid only for Bosch Fuel-Injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0 460 414 014

Note VDT-I-460/139

see VDT-W-460/.

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	800	3,4 - 3,8	mm		
1 2 Supply-pump pressure	800	4,7 - 5,3	bar (kgl/cm²)		
1 3 Full-load delivery with	-	-	cm ³ /1000 strokes	ļ	
charge-air pressure Full-load delivery without	800	64,5 - 65,5	cm³/1000 strokes		3,0 (3,5)
charge-air pressure 1 4 Idle regulation	300	21,0 - 25,0	cm ³ /1000 strokes		3,0 (4,0)
1.5 Full-speed regulation	1300	19,0 - 25,0	cm ³ /1000 strokes		1
1 6 Start	100	min. 78,0	cm³/1000 strokes		
1 7 Load-dependent port-closing	-				<u></u>

Overflow temperature 45° C

2.1 Timing device	n = rev/min	500	800	1	1200
E.1 Illimiy device	mm	0,7-1,5 (0,4-1,8)		6,6-7,4	(6,3-7,7)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	500 3,2-3,8		1200 6,5-7,1	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138 (40-153)	55	1200 5-138 (40-15	53)
2.3 Fuel deliveries				3. Dimen	ISIONS for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	Designation	mm
End stop	1340 1300 1250 1180 800 500	max. 3,0 (17,5-26) 54,5-61,5 (53,5-62) 66,5-68,5 (64,9-70) (62,4-67) 59,5-62,5 (57,6-64)	2,5) (),1) (',6)	K KF MS SVS	3,3 5,3 1,0 4,0
switch-off				В	
Idle stop End Stop	400 350 300 170 250	max. 1,5 5,0-11,0 (3,5-12 (18,5-22) min. 78 min. 60		Observations	
2.4 Solenoid	max. cut-in volte	ge			

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Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung.

1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1: Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 REN 2,0 e 6. Edition

VE 4/9 F 2400 R 95

Overflow temperature 45° C

supersedes 1.84 company: Renault

0 460 494 105

Test pressure line

engine: F 8 M

DHK: 1 688 901 022/130 bar

6x2x450 mm / 1 680 750 073

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
i. Settings	1400	4,1-4,6	mm		
1 1 Timing device travel		4,9-5,5	bar (kgf/cm²)		
1.2 Supply-pump pressure	1400	4,9-5,5	cm ³ /1000 strokes		2,5 (3,0
1 3 Full-load delivery with charge-air pressure Full-load delivery without	1000	27,8-28,8	cm ³ /1000 strokes		
charge-air pressure	425	6,0-10,0	cm ³ /1000 strokes		2,0 (3,0
1 5 Full-speed regulation	2650	10,5-16,5	cm³/1000 strokes		
1 6 Start	100	min. 42,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	1400				

2. Test Spe	cifications	checking values in brackets ()	
2 1 Timing device	n = rev/min mm	siehe Blatt 2	
2 2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,5-3,1	2400 7,7··8,3
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138 (40-153)	2400 55-138 (40-153)
2.2 Firel deliveries		<u> </u>	3. Dimensions

Overflow delivery	n = rev/min cm ¹ /10 s	600 55-138 (40-153)				
2 3 Fuel deliveries						
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge air press bar (kgf/cm²)			
End stop	2800 2650 2500 2400 2100 1400 1000 600	max. 6,0 (9,5-17,5) 21,0-29,0 (21,0-29,0) 29,2-31,8 (28,2-32,8) 29,9-32,3 (28,8-33,4) 27,5-29,5 (26,2-30,8) (26,0-30,6) 25,7-28,7 (24,2-30,2)	-			
switch-off	2400	0				
idle stop	650 600 425	max. 1,0 0,2-5,2 (4,0-12,0)				
End stop	330 500	min. 30,0 max. 29,0				
2 4 Solenoid	max cut in volta	xxx min. 10 V rated voltage 12V	•			

3. Dimen Designation	sions for assembly and adjustment mm
K	3,2-3,4
KF	5,7-5,9
MS ·	1,2-1,4
svs	2,8
^XK	18,7-20,7
^B XL	9,5-12,8
Observations	

Please note instructions on sheet 2.

BOSCH

2.1 Timing device

n = min/1	mm	Expansion element
600	0,7-1,5 (0,4-1,8)	12 V
1000	2,3-3,1 (2,0-3,4) (3,6-5,0)	12 V
1400	(3,6-5,0)	12 V
2000	6,3-7,1 (6,0-7,4)	12 V
2100	6,7-7,5 (6,4-7,8)	12 V
2400	7,0-7,7 (6,6-8,0)	12 V

Testing the hydr. cold-start accelerator:

Apply 12 V to expansion element of hydr. cold-start accelerator. At 300 1/min there must be a timing-device travel of 1.3 - 3.3 mm.

46

Test Specifications Distributor-type Fuel-injection Pumps

En

WPP 001/4 IHC 6.6i 3. Edition

supersedes 83 company IHC engine DT 402

VE 6/12 F 1100 R 102 0 460 426 025

DHK 1 688 901 020 172 + 3 bar

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Pre-stroke setting 0,2 mm + 0,02 (0,04)

see VDT-W-460/

Test Instructions and Test Equipment

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³	
1 1 Timing device travel	600	3,2 - 3,6	mm	0,75		
1 2 Supply-pump pressure	600	5,0 - 5,6	bar (kgf/cm²)	0,75		
1.3 Full-load delivery with	800	99,0-100,0	cm³/1000 strokes	0,75	3,5 (4	,0
charge-air pressure Full-load delivery without	600	81,0-83,0	cm³/1000 strokes	0		
charge-air pressure	375	20,0-26,0	cm³/1000 strokes	0		
1.5 Full-speed regulation	1200	33,0-39,0	cm ³ /1000 strokes	0,75	3,5 (4	,5
1 6 Start	100	min. 95	cm ³ /1000 strokes	0		
1.7 Load dependent port-closing						i

2. Test Specifications checking values in brackets ()					
2 1 Timing device	n = rev/min	400	600	700	
LDA=0,75 bar	mm	1,4-2,1 (1,0-2,4)	(2,7-4,1)	3,6-4,4 (3,3-4,7)	
22Supplypump	n - rev/min	400		1100	
LDA=0,75 bar	bar (kgf/cm²)	3,9-4,5		7,0 - 7,6	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-125 (40-140)		1100 55-125 (40-140)	

	C 7.0 5	33-123 (40)- 140 <u>)</u>	
2 3 Fuel deliveries				
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²)
End stop	1280 1220 1200 1080 800 600 *	max. 1,5 min. 2,0 95,0-98,0 88,5-90,5	(31,0-41,0) (93,5-99,5) (96,5-102,5) (85,7-93,3) (78,2-85,8)	
switch-off	1100	0		
idle stop	500 420 375	max. 1,5 min. 2,0	(18,0-28,0	
End stop	200 440	min. 95 max. 85		
2 4 Solenoid	max. cut-in voltage	xx min	. 10,0 V	

3. Dimen Designation	ISIONS tor assembly and adjustment mm
ĸ	-
KF	5,6-5,8
MS	1,5-1,7
sv s	max. 6,0
^ x κ	20,2-22,2
BX L	10,2-13,5
Observations	

Observations

Manifold-pressure
compensator stroke
= 4,0 mm
Correction at the
adjusting nut. (46)

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung. 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 VMA 2,4 d

1. Edition

4.7

VE 4/10 F 1900 L 106 0 460 404 026

Overflow temperature 45° C

supersede M Motori company HR 492 HT9

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/.

Pre-stroke setting

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1600	5,1 - 5,5	mm	0,75	
1.1 Timing device travel	1600	5,5 - 6,5	bar (kgl/cm²)	0,75	
1 2 Supply pump pressure	1600	47,0 - 48,0	cm ³ /1000 strokes	0,75	3,0 (3,5)
1 3 Full-load delivery with charge-air pressure Full-load delivery without	1600	31,0 - 34,0	cm ³ /1000 strokes	0	
charge-air pressure	350	16,0 - 20,0	cm ³ /1000 strokes	0	2,5 (3,5)
1.5 Full-speed regulation	1900	43,5 - 46,5	cm ³ /1000 strokes	0,75	
1 6 Start	100	min. 65	cm ³ /1000 strokes	0	
1.7 Load-dependent port-closing				,	

2. Test Spe	cifications	checking values in brackets ()	
2 1 Timing device	n = rev/min	1000	1600	1900
LDA= 0,75	mm	1,0-1,8 (0,7-2,1)	(4,6-6,0)	6,5-7,5 (6,4-7,8)
22 Supply pump	n = rev/min	400		1900
LDA = 0,75	bar (kgf/cm²)	1,5 - 2,1		6,8 - 7,4
Overflow delivery	n = rev/min cm ³ /10 s	500 55-110 (40-125)		1900 55-110 (40-125)

	CIII-710 S	33-110 (40-123)		00	(,
2 3 Fuel deliveries	.1	. 1		1	ISIONS for assembly and adjustment
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge air press bar (kgf/cm²)	Designation	mm
End stop	2100 2050 2030 1900	max. 1,0 min. 2,0 17,0 - 23,0 (16,0-24,0 (41,0-49,0 (29,8-35,2	0,75	K KF MS	3,2 - 3 5,7 - 6 1,4 - 1
	1600 1600 * 750 600	(44,8-50,2 41,5 - 44,5 (40,0-46,0 32,0 - 35,0 (30,5-35,5	0,75 0,90	svs	3,6
switch-off			·	A B	
idle stop	350 430	(14,0-22 min. 2,5	,0)	Observations	
End stop	500 350 450	max. 1,0 min. 48 max. 47,5		1	ld-pressure ator stroke m
2 4 Solenoid	max cut-in voit	ege xxx min. 10 V xx rated voltage 12V.			

- 3,4 - 6,0 - 1,6

46

WPP 001/4 VMA 3,6 e

1. Edition

VE6/11/F1900L113

Overflow temperature 45° C

supersedes Motori VM HR 692 HT/9

engine

0 460 416 022

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0.2

± 0,02(0,04)

see VDT-W-460/

1. Settings	Rot speed rev/min	Settings		Charge air press bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1500	4,7-5,3	mm	0,65	
•	1800	6,6-7,2	bar (kgf/cm²)	0,65	
1 2 Supply-pump pressure	1500	47,5-48,5	cm ³ /1000 strokes	0,65	3,5 (4,0)
1 3 Full-load delivery with charge-air pressure Full-load delivery without	600	36,0-40,0	cm ³ /1000 strokes	0	3,5 (4,0)
charge-air pressure	450	10,0-14,0	cm ³ /1000 strokes	0	
1 5 Full-speed regulation	2000	41,0-48,0	cm ³ /1000 strokes	0,65	3,0 (4,0)
1 6 Start	100	min. 42,0	cm³/1000 strokes	0	
1 7 Load-dependent port-closing	-				<u></u>

2. Test Spec	ifications	checking values in brackets ()		
2 1 Timing device LDA=0.65 ba	n = rev/min mm	1000 2,1-2,9(1,8-3,2)	1500 (4,3-5,7)	6,5-6,9	1800 (6,0-7,4)
2.2 Supply pump	n = rev/min	400			
LDA=0,65 bar	bar (kgf/cm²)	1,7-2,3			ماده کا این این این این این این این این این ای
Overflow delivery	n = rev/min cm ³ /10 s	400 55-138 (40-153)		55-138 (4	1900 10-153)
	1	1			

Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)
End stop	2200 2100 2000 1900 1500 * 600	max 1,5 14,5-20,5(13,0-22,0) (40,0-49,0) 45,2.47,8(43,9-49,1) (45,4-50,6) 38,5-41,5(36,6-43,4) (34,6-41,4)	0,65 0,65 0,65 0,65 0,65 0,26
switch-off			
Idle stop	700 550 450	max. 1,0 2,0-8,0(0,5-9,5) (7,5-16,5)	
End stop	350 450	min. 40,0 max. 45,0	
2 4 Solenoid	max cut+n volt	age xx min. 10 Volt x rated voltage 12V.	,

Designation	tor assembly and adjustment mm
K KF MS SVS XK XL A	20,2-22,2 11,9-15,2
	ld-pressure ator stroke

3. Dimensions

BOSCH

Testoil-ISO 41

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 PEU 2,3 k 3

1. Edition

VE 4/9 F 2075 R 126-1

Overflow temperature 45° C

supersedes.

0 460 494 123

Test pressure line

companyPeugeot engine: XD 3 S

DHK: 1 688 901 022/130 bar

6x2x450 mm / 1 680 750 073

Test Instructions and Test Equipment

Pre-stroke setting

mm

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

see VDT-W-460/

1. Settings	Rot. speed	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1500	5,8-6,2		0,8	
1 1 Timing device travel	1500	5,6-6,2	mm bar (kgf/cm²)	0,8	
1 2 Supply-pump pressure	500	42,8-43,8	cm ³ /1000 strokes	0	
1 3 Full-load delivery with charge air pressure	1500	54,5-55,5	cm³/1000 strokes	0,8	2,5 (3,0)
Full-foad delivery without charge-air pressure	400	17,0-21,0	cm ³ /1000 strokes	0	2,0 (3,0)
1 4 Idle regulation					
1.5 Full-speed regulation	2350	25,0-31,0	cm ³ /1000 strokes	0,8	
1 6 Start	100	min. 57,0	cm ³ /1000 strokes	0	İ
1 7 Load-dependent port-closing	-				

		checking values in brackets (
2 1 Timing device	n = rev/min mm	750 0,8-1,6(0,5-1,9) 2,5-3		1500 (5,3-6,7) 7	2000 ,8-8,6(7,5-8,
2 2 Supply pump	n = rev/min bar (kgf/cm²)	200 1,4-2,0	750 3,4-4,0	2000 7,1-7,3	7
Overflow delivery	n = rev/min cm³/10 s	500 55-138 (40-153)		2075 55-138 (40	-153)
2 3 Fuel deliveries				3. Dimens	for assembly
Speed control lever	Rot. speed	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	Designation	and adjustment mm
End stop	2650 2350 2250 2000 1500 1000 750* 500	max. 1,0 (24,0-32,0) 37,0-43,0(36,0-44,0) 53,0-55,0(51,7-56,3) (52,7-57,3) 52,0-55,0(50,5-56,5) 48,7-49,7(46,2-52,2) (40,3-46,3)	0,8 0,8 0,8 0,8 0,8 0,25 0	K KF MS SVS	K1 5,4-5,7 1,2-1,4 4,6
switch-off				A XK	20,2-22,2
elektr.	400	0		в ХГ	9,3-12,6
Idle stop	400 450 500 230 330	(15,0-23,0 4,5-9,5 (3,0-11,0) max. 3,5 min. 60 max. 60)	Manifold-pressure compensator stroke = 4,5 mm Correction at the adjusting nut. (46)	
	ŀ		L	1 4434349	,

test voltage

.. ..

Test Specifications Distributor-type Fuel-injection Pumps

46

WPP 001/4 SOF 2,5 K 1. Edition

En

VE 4/11F 1900 R 127 U 460 414 008 Test pressure line 6x2x450 mm / 1 680 750 073

supersedes -

company: Iveco -Sofim engine 8140.21

DHK: 1 688 901 023 / 172 + 3 bar

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting 0,3, mm $\pm 0,02$ (0,04)

Rot speed rev/min	Settings	Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
1100	4,2 - 4,6 mm	0,8	
1100	5,3 - 5,9 bar (kgf/cm²)	0,8	
1100	45,5 - 46,5 cm3/1000 stro	kes 0,8	3,5 (4,0
600	35,5 - 36,5 cm ³ /1000 stro	kes 0	
400	13,0 - 17,0 cm ³ /1000 stro	kes 0	3,0 (4,0
2200	18,0 - 24,0 cm ³ /1000 stro	okes 0,8	
100	min. 60 cm ³ /1000 stro	okes 0	ļ
1100	-	0,8	
	1100 1100 1100 600 400 2200 100	1100 4,2 - 4,6 mm 1100 5,3 - 5,9 bar (kgf/cm²) 1100 45,5 - 46,5 cm³/1000 stro 600 35,5 - 36,5 cm³/1000 stro 400 13,0 - 17,0 cm³/1000 stro 2200 18,0 - 24,0 cm³/1000 stro 100 min. 60 cm³/1000 stro	Settings Settings

2. Test Spec	cifications	checking values in brackets ()		
2 1 Timing device LDA = 0,8 bai	n = rev/min mm	800 2,4-3,2 (2,1-3,5)	1100 (3,7-5,1)	1500 5,8-6,6(5,5-6,9)	1900 7 <u>.6-8.4(7.</u> 3-8
22 Supply pump LDA = 0,8 bat	n = rev/min bar (kgf/cm²)	600 3,8 - 4,4		1900 7,5 - 8,1	
Overflow delivery	n = rev/min cm ³ /10 s	600 5,5-138 (40-153)		1900 55 <u>-138 (40-1</u>	
				3. Dimens	ions

2 3 Fuel deliveries			
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)
End stop	2350 2200 2000 1900 1500 1100	max. 10,0 (16,5-2! 30,0-38,0 (29,5-38 40,15-42,65 (38,8-44 42,75-45,25 (41,4-48 (43,4-48 36,5-37,5 (34,4-39	8,5) 0,8 4,0) 0,8 6,6) 0,8 8,6) 0,8 9,6) 0,3
switch-off	600	(32,6-39	9,4) 0
Idle stop	550 400 350 200 350	max. 2,0 (10,5-19 27,0-33,0 (25,5-34 min. 55 max. 55	
2 4 Solenoid	max. cut-in vo		<u></u>

3. Dimens	for assembly and adjustment
к	
KF	5,2-5,4
MS	0,9-1,1
svs	4,6
A	
	İ

*Manifold-pressure compensator stroke = 6,2 mm

- 0,2 mm

BOSCH

Testcil-ISO 4113

Test Specifications Distributor-type Fuel-injection Pumps

4

WPP 001/4 REN 2,0 h

3. Edition

En

Overflow temperature 45° C

2.84

supersedes REN company: I8S-234

engine:

0 460 494 128

VE 4/9 F 2100 R 130

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/

Pre-stroke setting				1 at	Difference in
1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	delivery cm ³
	1400	4,0-4,4	mm	0,8	
1 1 Timing device travel	1400	5,1-5,7	bar (kgf/cm²)	0,8	
1 2 Supply-pump pressure	1400	46,7-47,7	cm ³ /1000 strokes	0,8	(2,5 (3,0)
3 Full-load delivery with charge-air pressure Full-load delivery without	600	29,5-30,5	cm ³ /1000 strokes	0	
charge-air pressure 1 4 Idle regulation	375	4,0-8,0	cm ³ /1000 strokes	0	2,5 (3,0)
1.5 Full speed regulation	2300	18,0-24,0	cm ³ /1000 strokes	0,8	
1 6 Start	100	min. 50,0	cm ³ /1000 strokes	0	
t 7 Load dependent nort-closing	_				i

2. Test Spec	cifications	checking values in brackets ()			
2 1 Timing device	n = rev/min mm	1000 1400 1,9-2,7(1,6-3,0)(3,5-4,9	180 5,8-6,6 (0 2 5,5-6,9)6,1	000 -6,9(5,8-7,2)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	400 1,9-2,5		1800 6,3-6,9	
Overflow delivery	n = rev/min cm³/10 s	500 55-138 (40-153)	55	2100 -138 (40-15	3)
2 3 Fuel deliveries		Fuel delivery	l Charge air press	3. Dimen	Sions for assembly and adjustment I mm
Speed control lever	Rot. speed rev/min	cm ³ /1000 strokes	bar (kgf/cm²)		
End stop	2600 2400 2300 2000 1400	max. 2,0 max. 14,0 (17,0-25,0) 39,9-42,9 (39,1-43,7) (44,9-49,5)	0,8 0,8 0,8 0,8	K KF MS	3,2-3,4 5,7-6,0 1,4-1,6
	1000 700 * 600	42,6-45,6 (41,1-47,1) 35,3-36,3 (33,5-38,1) (27,7-32,3)	0,8	svs	5,5

(7,0-15,0)

(2,0-10,0)

	Observations
- 1	Observations

A XK

XL

Manifold-pressure compensator stroke = 4,5 mm Correction at the adjusting nut. (46)

BOSCH

switch-off

elektr.

End stop

2.4 Solenoid

idle stop

400

350

375

480

170

300

max. cut-in voltage

0

9,0-13,0

max. 2,0

min. 40

max. 40

1961998xxx rated voltage 12V

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xxxx min. 10 V

20,2-22,2

7,7-11,0

WPF 001/4 REN 2,0 m

1. Edition

VE 4/9 F 2100 R 130 - 1 Overflow temperature 45° C 0 460 494 157

supersedes company:

Renault

engine:

I 8 S 234 Turbo

All test specifications are valid only for Bosch : uel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
A A Timing dames tenual	1400	4,0 - 4,4	mm	0,8	
1.1 Timing device travel	1400	5,1 - 5,7	bar (kgf/cm²)	0,8	
1 2 Supply-pump pressure 1 3 Full-load delivery with	1400	46,7-47,7	cm ³ /1000 strokes	8,0	2,5 (3,0
charge-air pressure Full-load delivery without	600	29,5-30,5	cm ³ /1000 strokes	0	j
charge-air pressure	375	4,0-8,0	cm ³ /1000 strokes	0	2,5 (3,0
1.5 Full-speed regulation	2300	18,0-24,0	cm ³ /1000 strokes	0,8	i
1 6 Start	100	min. 50	cm ³ /1000 strokes	0	
1.7 Load-dependent port-closing					

2. Test Spec	ifications	checking values in brackets ()		
21 Timing device LDA = 0,8 bar	n = rev/min mm	1000 1,9-2,7 (1,6-3,0)	1400 (3,5-4,9)	1800 5,8-6,6(5,5-6	2000 ,9) 6,1-6,9(5,8-7
22Supplypump LDA = 0,8 bar	n = rev/min bar (kgf/cm²)	400 1,9 - 2,5		1800 6,3 -	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138 (40-1	53)		00 (40-153)
	1				

2 3 Fuel deliveries			
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kg1/cm²)
End stop	2600 2400 2300 2000 1400 1000 * 700 600	max. 2,0 max. 14,0 (17,0 - 25,0 39,9-42,9 (39,1- 43,7 (44,9 - 49,5 42,6-45,6 (41,1- 47,1 35,3-36,3 (33,5 - 38,1 (27,7 - 32,3	0,8 0,8 0,8 0,8 0,2
switch-off elektr.	400	0	
Idle stop	350 375 480 170 900	9,0 - 13,0 (7,0 - 15,0 (2,0 - 10,0 max. 2,0 min. 40 max. 40))))
2.4 Solenoid	max. cut-in volts	rated voltage 12V.	

5-138 (40-153)					
3. Dimen	Sions for assembly and adjustment mm				
K KF MS SVS	3,1 - 3,4 5,7 - 6,0 1,4 - 1,6 3,6				
A B					
Observations					
*Manifold-pressure compensator stroke = 4.5 mm					

WPP 001/4 VWW 1,6 V 5

3. Edition

VE 4/9 F 2250 R 134-1

Overflow temperature 45° C

supersedes 12.83 company: VWW

0 460 494 134

engine: 086 T

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

mm

see VDT-W-460/ ..

1. Settings	Rot. speed rev/min	Settings		Charge-air presobar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1500	3,3-3,7	mm	0,75	
1 2 Supply-pump pressure	1500	4,6-5,2	bar (kgf/cm²)	0,75	
1 3 Full-load delivery with	1500	42,5-43,5	cm ³ /1000 strokes	0,75	2,5 (3,0)
charge-air pressure Full-load delivery without	600	22,5-23,5	cm ³ /1000 strokes	0	
charge-air pressure 1 4 Idle regulation	450	6,0-10,0	cm ³ /1000 strokes	0	2,0 (3,0
1 5 Full-speed regulation	2525	9,0-15,0	cm ³ /1000 strokes	0,75	
1 6 Start	100	min. 35	cm ³ /1000 strokes	0	
1 7 Load-dependent port-closing	_				

2. Test Spec	cifications	checking values in brackets ()	
2 1 Timing device LDA=0,75 bar	n = rev/min mm	1000 1,3-2,1 (1,0-2,4)	1500 (2,8-4,2)	2250 6,0-6,8 (5,7-7,1)
22 Supply pump LDA=0.75 bar	n = rev/min bar (kgf/cm²)	600 2,5 - 3,1		2250 6,5-7,1
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138 (40-153)		2250 (0,75 bar) 55-138 (40-153)
2 3 Fuel deliveries	.1	_ 		3. Dimensions

	cm ³ /10 s	55-138 (40-153)	
2 3 Fuel deliveries			
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)
End stop	2750 2525 2250 1500 1000 * 600	max. 3,0 (8,0- 37,5-39,5 (36,2-4) (40,8-4) 32,5-33,5 (30,8-3) (20,0-2)	0,8) 0,75 5,2) 0,75 5,2) 0,3
switch-off		-	
mech.	2250	0	
elektr.	400	0	
idle stop	450 1200	(4,0- max. 9,0	12,0)
End stop	400 500	min. 21,0 max. 29,0	
2 4 Solenoid	max. cut-in volta	e xxx min. 10,0 V	

3. Dimer	for assembly and adjustment imm
Designation	
ĸ	
KF	3,2 - 3,4
	5,7 - 6,0
MS	1,2 - 1,4
svs	5,7
	5,7
A	
X I&	18,4 - 20, 10,1- 13,
XL	10.1-13.

Manifold-pressure compensator stroke = 4,0 mm Correction at the adjusting nut. (46)

XXXXXXXXX

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<u>دا</u>ي مسا

Test Specifications Distributor-type Fuel-injection Pumps

46

WPP 001/4 VWW 1,6 V 6 3. Edition

n_

VE 4/9 F 2250 R 134-2 O 460 494 135 Overflow temperature 45° C

supersedes 12.83 VWW engine 086 T

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting	•	mn
Pre-stroke setting	_	*****

1. Settings	Rot speed	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1500	3,3 - 3,7	mm	0,75 bar	
1.1 Timing device travel	1500	4,6 - 5,2	bar (kgf/cm²)	0,75	
1 2 Supply-pump pressure	1500	42,5 - 43,5	cm³/1000 strokes	0,75	2,5 (3,0)
1.3 Full-load delivery with charge-air pressure Full-load delivery without	600	22,5 - 23,5	cm³/1000 strokes	o	
charge-air pressure 1 4 tdle regulation	475	6,0 - 10,0	cm ³ /1000 strokes	0	2,0 (3,0)
1 5 Full-speed regulation	2525	9,0 - 15,0	cm ¹ /1000 strokes	0,75	
1 6 Start	100	min. 35	cm³/1000 strokes	0	
1.7 Load-dependent port-closing	-				

2. Test Speci	fications	checking values in I	brackets ()			
2 1 Timing device	n = rev/min	100	•	1500	6.0	2250
LDA = 0.75 bap	mm	1,3-2,1 (1,0-2,4)	(2,8-4,2	2) 0,0	-6,8 (5,7-7,1)
r r oabbiy bamb	n = rev/min	_	00		_	2250
LDA = 0.75 ba	bar (kgl/cm²)	2,5	-3,1		6,	5-7,1
010,110,110,110,1	n = rev/min cm³/10 s	-	00 (40-153)		55-138	2250 (40-153)
2 3 Fuel deliveries	antina di sel Malain marine i agrico financia di Antina Malain Malain (Malain M				3. Dimer	sions for assembly and adjustment f mm
	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²)	Designation	
End stop	2750 2525 2250		(8,0-16,0) (36,2-40,8) (40,8-45,2)	0,75 0,75 0,75 0,75	K KF	3,2 - 3,4 5,7 - 6,0
	1500 * 1000 600	32,5-33,5	(30,8-35,2) (20,0-26,0)	0,3	MS SVS	1,2 - 1,4
switch-off	400	0			A XK	18,4 - 20,
elektr.	400				XL	9,4 - 12,
Idle stop	475 1200	max. 4,0	(4,0-12,0)	Observations	
End stop	400 500	min. 21,0 max. 29,0			compensa = 4,0 mm Correction	-pressure tor stroke on at the g nut. (46)
2 4 Solenoid	max. cut-in voltag	<pre>e xxx min. rated volta</pre>				

WPP 001/4 VWW 2,4 n 1. Edition

VE 6/10 F 2400 L 135

0 460 406 026

As of FD 444 note page 2.

supersedes companyVWW

engine: 087T - V01

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers mm

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
,	1500	1,5- 1,9	mm	1,3	
1.1 Timing device travel	1500	5,7- 6,3	bar (kgf/cm²)	1,3	
1 2 Supply-pump pressure	1500	44,0-45,0	cm ³ /1000 strokes	1,3	2,5(3,0)
1 3 Full-load delivery with charge-air pressure	700	24,0-25,0	cm³/1000 strokes	0	
Full-load delivery without charge-air pressure 1 4 Idle regulation	415	6,0-10,0	cm³/1000 strokes	0	2,0(3,0)
1 5 Full-speed regulation	2675	10,0-16,0	cm ³ /1000 strokes	1,3	
1 6 Start	100	min. 42,0	cm ³ /1000 strokes	0	
1.7 Load-dependent port-closing					

2. Test Spec	cifications	checking values in brackets ()	
1 Timing device	n = rev/min mm	siehe	Blatt 2	
2 2 Supply pump n = rev/min bar (kgf/cm²)		600 3,3-3,9	1500* 6,8-7,4	2400 7,8-8,4
Overflow delivery	n = rev/min cm³/10 s	600 55-138 (40-153)	24(55-138	(40-153)
2 3 Fuel deliveries Speed control lever	Rot. speed	Fuel delivery	Charge-air press bar (kgf/cm²)	3. Dimensions tor assembly and adjustment mm
End stop	2825 2675 2400 1500 1000 700 600 **	max. 6,0 (9,0-17,0) 35,0-37,0 (33,7-38,3) (42,2-46,8) 37,0-38,0 (35,2-39,8) (21,5-27,5) 21,2-24,8 (20,0-26,0)	1,3 0,7 0	KF 3,2-3,4 6,3-6,6 MS 1,7-1,9 max. 5,9
switch-off				^
elektr.	400	0		В
Idle stop	750 415 400 500	max. 3,0 (4,0-12,0) min. 16,0 max. 26,0		Please note instructions on sheet 2
2.4 Solenoid	max. cut-in volta	oe xx min. 10 V rated voltage 12V.		

2.1 Timing device

$n = min^{-1}$	ALDA	Solenoid valve	mm
1200	1.3 bar	12 V	0.0-0.8 (0.0-1.1)
1200	1.3 bar	0 V	1.5-2.7 (1.4-2.8)
1500	1.3 bar	12 V	(1.0-2.4)
1500	1.3 bar	0 V	3.2-4.2 (3.0-4.4)
2400	1.3 bar	12 V	5.4-6.2 (5.1-6.5)

Adjust EGR with a gauge

$n = min^{-1}$	ALDA	Solenoid valve	Fuel delivery cm ³ / 1000 strokes
1000	0 bar	12 V	13.0-15.0

as of FD 444:

2.3 Fuel deliveries

n = min ⁻¹ ALDA		Fuel delivery cm³ / 1000 strok?s
2825	1.3	max. 6.0
2675	1.3	10.0-16.0 (9.0-17.0)
2400	1.3	35.0-37.0 (33.7-38.3)
1500	1.3	44.0-45.0 (42.2-46.8)
1000**	0.7	37.0-38.0 (35.2-39.8)
600	0	25.5-26.5 (23.0-29.0)

End stop

$n = min^{-1}$	ALDA	Fuel delivery cm³ / 1000 strokes
400	0	min. 20.0
500	0	max. 30.0

^{**} ALDA-stroke = 7.5 mm

^{* 0} V at the solenoid valve. Do not activate the cold-start accelerator lever when checking starting fuel delivery.

WPP 001/4 VWW 2,4 n 1 1. Edition

VE 6/10 F 2400 L 135 - 1

0 460 406 028

Pre-stroke setting

1.7 Load-dependent port-closing

As of FD 444 note page 2.

supersedes company 087 T - Vol

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers mm

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1500	1,5- 1,9	mm	1,3	
1 1 Timing device travel	1500	5,7- 6,3	bar (kgf/cm²)	1,3	
1 2 Supply-pump pressure	1500	44,0-45,0	cm ³ /1000 strokes	1,3	2,5 (3,0
1 3 Full-load delivery with charge-air pressure Full-load delivery without	700	24,0-25,0	cm³/1000 strokes	0	
charge air pressure 1 4 Idle regulation	415	6,0-10,0	cm ³ /1000 strokes	0	2,0 (3,0
1.5 Full-speed regulation	2675	10,0-16.0	cm³/1000 strokes	1,3	
1 6 Start	100	min. 42,0	cm³/1000 strokes	0	

2. Test Spec	cifications	checking values in brackets ()				
2 1 Timing device	n = rev/min mm	siehe Blatt 2					
2 2 Supply pump	n = rev/min	600	1500*	2400			
ALDA=1,3 bar	bar (kgf/cm²)	3,3-3,9	6,8-7,4	7,8 - 8,	.4		
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138 (40-153)	2400 55-138 (4	10-153)			
2 3 Fuel deliveries	L	tt at deliver.	Charge-air press	3. Dimer	ISIONS for assembly and adjustment t mm		
Speed control lever	Rot speed rev/min	F set delivery cm ³ /1000 strokes	bar (kgf/cm²)	Designation			
End stop	2825 2675 2400 1500 1000 700 600**	max. 6,0 (9,0-17) 35,0-37,0(33,7-38) (42,2-46) 37,0-38,0(35,2-39) (21,5-27) 21,2-24,8(20,0-26)	(3) 1,3 (8) 1,3 (8) 0,7 (5) 0	K KF MS SVS	3,2-3,4 6,3-6,6 1,7-1,9 max.5,9		
switch-off				A			
elektr. mech.	400 2400	0		8			
End stop	750 415 400 500	max. 3,0 (4,0-12, min. 16,0 max. 26,0	0)		note instruc n sheet 2		
2 4 Solenoid	mav cut-in voltag	 xxx min. 10 V rated voltage 12V 					

2.1 Timing device

$n = min^{-1}$	ALDA	Solenoid valve	mm
1200	1.3 bar	12 V	0.0-0.8 (0.0-1.1)
1200	1.3 bar	0 V	1.5-2.7 (1.4-2.8)
1500	1.3 bar	12 V	(1.0-2.4)
1500	1.3 bar	0 V	3.2-4.2 (3.0-4.4)
2400	1.3 bar	12 V	5.4-6.2 (5.1-6.5)

Adjust EGR with a gauge

n = min ⁻¹	ALDA	Solenoid valve	Fuel delivery cm ³ / 1000 strokes	_
1000	0 bar	12 V	13.0-15.0	

as of FD 444:

2.3 Fuel deliveries

n = min ⁻¹	ALDA	Fuel delivery cm³ / 1000 strokes
2825	1.3	max. 6.0
2675	1.3	10.0-16.0 (9.0-17.0)
2400	1.3	35.0-37.0 (33.7-38.3)
1500	1.3	44.0-45.0 (42.2-46.8)
1000**	0.7	37.0-38.0 (35.2-39.8)
600	0	25.5-26.5 (23.0-29.0)

End stop

$n = min^{-1}$	ALDA	Fuel delivery cm³ / 1000 strokes
400	0	min. 20.0
500	0	max. 30.0

^{**} ALDA-stroke = 7.5 mm

^{* 0} V at the solenoid valve. Do not activate the cold-start accelerator lever when checking starting fuel delivery.

WPP 001/4 VWW 1,6 W8

1. Edition

stolds0 4113

VE 4/9 F 2400 R 136-1 0 460 494 166

Overflow temperature 45° C

supersedes VW

company: 086-1,6 L

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting mm see VDT-

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1500 1500	2,4-2,8 4,3-4,9	mm bar (kgf/cm²)		
1 2 Supply pump pressure 1 3 Full-load delivery with charge air pressure	1500	32,0-33,0	cm ³ /1000 strokes		2,5 (3,0)
Full-load delivery without charge air pressure 1 4 Idle regulation	450	6,0-10,0	cm ³ /1000 strokes		2,0 (3,0)
1 5 Full-speed regulation 1 6 Start	2600 100	11,0-17,0 min. 35,0	cm ³ /1000 strokes		
1 7 Load-dependent port-closing	-				

2. Test Spe	ecifications	checking values in brackets ()	
2.1 Timing device	n = rev/min mm	1000 0,6-1,4(0,3-1,7)	1500 (1,9-3,3)	2400 5,8-6,6 (5,5-6,9)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,2-2,8	6,	2400 4-7,0
Overflow delivery	n = rev/min cm ³ /10 s	600 44-138(40-153)	55-13	2400 8(40-153)
				2 Dimoneione

Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)
End stop	2800 2600 2400 1500 600	max. 3,0 (10,0-18 27,3-29,3 (30,2-34 21,5-24,5 (20,0-26	,8)
switch-off elektr.	400	0	
idle stop	1200 600 450	max. 6,0 max. 7,0 (4,0-10,0))
End stop	400 500	min. 18 max. 23,5	
2.4 Solenaid	max. cut-in volt	age xxx min. 10 V , rated voltage 12V.	

3. Dimens Designation	mm
	
K	3,3 5,7-5,9
KF	i .
MS	1,3-1,5
svs	2,5
A	
B	
]
Observations	

J9

WPP 001/4 VWW 2,0 i 3

7.83

153

2. Edition

VE 5/10 F 2400 L 137

0 460 405 030

Overflow temperature 45° C

supersedes

VWW company: engine:

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers ¹ 0,02 (0,04)

Test Instructions and Test Equipment

Pre-stroke setting

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1400 1400	2,4-2,8 5,0-5,6	mm		
1 2 Supply-pump pressure	-		bar (kgf/cm²) cm³/1000 strokes		
1 3 Full-load delivery with charge-air pressure Full-load delivery without	1400	35,0-36,0	cm ³ /1000 strokes		2,5 (3,0)
charge-air pressure 1 4 Idle regulation	375	6,0-10,0	cm ³ /1000 strokes		2,0 (3,0)
1 5 Full-speed regulation	2650	6,0-12,0	cm ³ /1000 strokes		
1 6 Start	100	min. 50,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2. Test Spe	cifications	checking values in brackets ()	0400
2 1 Timing device	u = 16A\miu	1,3-2,1(1,0-2,4)	1400 (1,9-3,3)	5,1-5,9 (4,8-6,2)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,8-3,4		2400 7,5-8,1
Overflow delivery	n = rev/min cm³/i0 s	500 55-138 (40-153)		2400 55-138 (40-153)

			
2 3 Fuel deliveries			
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)
End stop	2800 2650 2400 1400 750	max. 3,0 (5,0-13,0 29,5-31,5(28,3-32,7 (33,3-37,7 25,0-28,0(24,2-28,8	') ')
switch-off mech. elektr.	2400 400	0	
Idle stop	375 450 400	(4,0-1 max. 3,0 min. 16,5	2,0)
End stop	500	max. 23,5	
2.4 Solenoid	max. cut-in volt	mge xx min. 10,0 V x rated voltage 12V.	

Designation and adjustment mm K KF 5,7-6,0 MS 1,7-1,9 2,8 A B Observations	ISIONS for assembly and adjustment
KF 5,7-6,0 MS 1,7-1,9 SVS 2,8	
MS 1,7-1,9 svs 2,8	-
svs 2,8	5,7-6,0
A B	1,7-1,9
8	2,8
Observations	

J10

WPP 001/4 VWW 2,0 i

2. Edition

astoilisto 4113

VE 5/10 F 2400 L 137-1 Overflow temperature 45° C

supersedes 7.83 vww engine: 153

0 460 405 032

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,14

2. Test Specifications checking values in brackets (

max. cut-in voltage

± 0,02 (0,04)

see VDT-W-460/...

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1400	2,4-2,8	mm		
1 2 Supply-pump pressure	1400	5,0-5,6	bar (kgf/cm²) cm³/1000 strokes		
3 Full-load delivery with charge-air pressure Full-load delivery without	1400	35,0-36,0	cm³/1000 strokes		2,5 (3,0
charge-air pressure 1 4 Idle regulation	375	6,0-10,0	cm³/1000 strokes		2,0 (3,0
1 5 Full-speed regulation	2650	6,0-12,0	cm ³ /1000 strokes		
1 6 Start	100	min. 50,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-			<u> </u>	

n = rev/min mm	1000 1,3-2,1 (1,0-2,4)	1400 (1,9-3,3)		2400 -5,9 (4,8-6,2
n = rev/min bar (kgf/cm²)	500 2,8-3,4		7,5-	2400 ·8 ,1
n = rev/min cm³/10 s	500 55-138 (40-153)	55	2400 5-138 (40-153	
_1			3. Dimen	and adjustment
Rot. speed	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²):	Designation	mm
2800 2650 2400 1400 750	max. 3,0 (5,0-13,0 29,5-31,5 (28,3-3 (33,3-3 25,0-28,0 (24,2-2) 2,7) 7,7) 8,8)	K KF MS SVS	5,7-6,0 1,7-1,9 2,8
2400 490	0		В	
375 450 400 500	(4,0-12,0) max. 3,0 min. 16,5 max. 23,5	·	Observations	
	mm n = rev/min bar (kgf/cm²) n = rev/min cm³/10 s Rot. speed rev/min 2800 2650 2400 1400 750 2400 490 490 375 450 400	The second color of the	The speed Fuel delivery Charge-air press bar (kgt/cm²) 29,5-138 (40-153) 29,5-31,5 (28,3-32,7) 1400 750 25,0-28,0 (24,2-28,8) 2400 0 0 0 0 0 0 0 0 0	Rot. speed rev/min Fuel delivery cm²/1000 strokes Charge-air press. bar (kgf/cm²) 29,5-31,5 (28,3-32,7) 1400 750 25,0-28,0 (24,2-28,8) 2400 0 0 0 0 0 0 0 0 0

2.4 Solenoid

xxx min. 10,0 V rated voltage 12V

40

WPP 001/4 IHC 3,9 y 3. Edition

En

(/)

VE 4/11 F 1150 R 140 O 460 414 009 DHK 1 688 901 020 Overflow temperature 45° C

supersedes 4 • 84 company: IHC

company: DT 239/856

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,2

mm ± 0,0

± 0,02 (0,04)

see VDT-W-460/...

1. Settings	Rot. speed	Settings	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	800	4,5 - 4,9 _{mm}	0,8	
1 1 Timing device travel	800	5,3 - 5,9 bar (kgf/cm²)	8,0	
1 2 Supply pump pressure	800	92,2 - 93,2 cm ³ /1000 strokes	0,8	3,5 (4,0)
1 3 Full-load delivery with charge-air pressure	500	75,5 - 77,5 cm ³ /1000 strokes	0	
Full-toad delivery without charge-air pressure	350	23,0 - 27,0 cm ³ /1000 strokes	0	3,5 (4,0)
1 4 Idle regulation	1250	42,0 - 48,0 cm ³ /1000 strokes	0,8	
1 5 Full-speed regulation 1 6 Start	100	min. 100 cm ³ /1000 strokes	0	
1 7 Load-dependent port-closing	-			

2. Test Spec	ifications	checking values in brackets)				
2 1 Timing device LDA = 0,8 ba	n = rev/min	400 0,8-1,6 (0,5-1,		300 - 5,4)	5,3 -	6,1	1150 (5,0 - 6,4)
22Supply pump LDA = 0,8 ba	n = rev/min par (kgf/cm²)	400 3.7 - 4,3			6	1150 .4 -	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138 (40-1	53)		55-138	1150 3 (40))-153)
2 3 Fuel deliveries			Charge-air	1.	3. Dime		ONS for assembly and adjustment mm
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	bar (kgf/cn				
End stop	1300 1270 1250 1130 800 800 * 500 500	85,4 - 88,4 (8	(0,0-95,4) $(0,0-95,4)$	8 8 8 8	K KF MS SVS		5,2 - 5,4 1,2 - 1,4 5,0 20,2 - 22,2
switch-off					⅓ K B L	i	20,2 - 22,2 12,3 - 15,7
idle stop	350 400 450 220 300	5,0-11,0 (2 max. 3,0 min. 100 max. 80	(0,5-29,5) 3,5-12,5)		compe = 4,9 Corre	fold- ensat 9 mm ectio	pressure for stroke on at the nut. (46)
2.4 Solenoid	max cut-in volta	ge xx min. 10 \	!				

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rated voltage 12V.

WPP 001/4 VWW 2.4 1

3. Edition

VE 6/10 F 2400 L 144

Overflow temperature 45° C

supersed

0 460 406 029

company087 T engine:

Different test specs with restriction bore 0.86 mm. See Page 2.

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting	mm			see VDT-W-460/	
1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel 1 2 Supply-pump pressure 1 3 Full-load delivery with charge-air pressure Full-load delivery without charge-air pressure 1 4 Idle regulation 1 5 Full-speed regulation 1 6 Start	1500 1500 600 1500 375 2600	1,2-1,6 5,7-6,3 25,5-26,5 44,0-45,0 6,0-10,0 10,0-16,0 min. 42	mm bar (kgf/cm²) cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes	0,75 0,75 0 0,75 0 0,75	2,5 (3,0) 2,0 (3,0)
1.7 Load-dependent port-closing	-				

	fications	checking values in brackets (
DA 0 75 ham	n = rev/min mm	See Page 2 (with	hout restriction bore)
	n = rev/min	600	2400
	bar (kgf/cm²)	3,3-3,9	7,8 - 8,4
	n = rev/min	600 (0 bar)	2400 (0,75 bar)
	cm ³ /10 s	55-138(40-153)	55-138(40-153)

Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge air press bar (kgf/cm²)
End stop	2750 2600 2400 1500 800** 600	max. 4,0 35,0-37,0 32,5-33,5	(9,0-17,0) (33,7-38,3) (42,2-46,8) (30,0-36,0) (23,0-29,0)	0,75
switch-off				
elektr.	400	0		
idle stop	375 450	max. 3,0	(4,0-12,0)	
End stop	400 500	min. 20 max. 30		
2 4 Solenoid	max. cut-in voltag			<u> </u>

	3. Dimens	tor assembly
5	Designation	end adjustment mm
	K	3,2-3,4
	KF	6,3-6,6
	MŞ	1,7-1,9
	svs	max.6,0
	LDA-Hub**	5,3
	A XK	21,8-23,8 8,9-12,3
	Observations	

VWW 2.4 1 1

Timing device

n = min ⁻¹	Solenoid valve	manifold-pressure compensator	men
1500 1500 2000 2000 2400	12 Volt 0 Volt 12 Volt 0 Volt 12 Volt	0.75 0.75 0.75 0.75 0.75	1.2-1.6 (0.7-2.1) 3.0-4.0 (2.8-4.2) 3.6-4.4 (3.3-4.7) 4.9-6.1 (4.8-6.2) 5.6-6.4 (5.3-6.7)
Supply pump			
1500	0 Volt	0.75	6.8-7.4 bar

Differing test specifications for solenoid valve with throttle bore

Timing device

n = min ⁻¹	Solenoid valve	manifold-pressure compensator	mm
1500 1500 2000 2000 2400	12 Volt 0 Volt 12 Volt 0 Volt 12 Volt	0.75 0.75 0.75 0.75 0.75	0.8-1.2 (0.3-1.7) 3.0-4.0 (2.8-4.2) 3.1-3.9 (2.8-4.2) 5.8-7.0 (5.7-7.1) 5.0-5.8 (4.7-6.1)
Supply pump 1500	0 Volt	0.75	6.8-7.4 bar
Idle 415 min-1 750 min Full load	6.0-10.0 (4. max. 3.0	0-12.0) ccm/1000 str.	
2850 min-1 2675 min	max. 4.0 10.0-16.0(9.	ccm/1000 str. .0-17.0) ccm/1000 str.	

(1)

Test Specifications Distributor-type Fuel-injection Pumps 46

WPP 001/4 VWW 2,4 1 1

3. Edition

VE 6/10 F 2400 L 144-1

Overflow temperature 45° C

supersedes 2.83 company: VWW engine: 087 T

0 460 406 030

Different test specs with restriction bore 0.86 mm. See Page 2.

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

- mm

see VDT-W-460/

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1500	1,2-1,6	mm	0,75	
1 1 Timing device travel	1500	5,7-6,3	bar (kgf/cm²)	0,75	
1 2 Supply-pump pressure	600	25,5-26,5	cm³/1000 strokes	0	
1 3 Full-load delivery with charge-air pressure	1500	44,0-45,0	cm³/1000 strokes	0,75	2,5 (3,0)
Full-load delivery without charge-air pressure	375	6,0-10,0	cm³/1000 strokes	0	2,0 (3,0)
1 4 Idle regulation 1 5 Full-speed regulation	2600	10,0-16,0	cm³/1000 strokes	0,75	
1 6 Start	100	min. 42	cm³/1000 strokes	0	
1 7 Load-dependent port-closing	-	-			

2. Test Spec	cifications	checking values in brackets ()	
21 Timing device LDA=0,75 bar	n = rev/min mm	See Page 2 (withou	t restriction bore)	
22 Supply pump LDA=0,75 bar	n = rev/min bar (kgf/cm²)	600 3,3-3,9	2400 8,1-8,7	
Overflow delivery	n = rev/min cm ³ /10 s	600 (0 bar) 55-138(40-153)	2400 (0,75 bar) 55-138(40-153)	
1	1	<u>.]</u>		

Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgf/cm²)
End stop	2750 2600 2400 1500 800** 600	max. 4,0 35,0-37,0 32,5-33,5	(9,0-17,0) (33,7-38,3) (42,2-46,8) (30,0-36,0) (23,0-29,0)	0,75 0,75 0,75 0,75 0,3 0
switch-off mech. elektr.	2400 400	0		
idle stop	375 450	max. 3,0	(4,0-12,0)	
End stop	400 500	min. 20 max. 30		

3. Dimens Designation	for assembly and adjustment mm
к	3,2-3,4
KF	6,3-6,6
MS	1,7-1,9
svs	max.6,0
LDA-Hub**	5,3
A XK	21,8-23,8
в ХГ	8,9-12,3
Observations	
1	

BOSCH

Timing device

n = min ⁻¹	Solenoid valve	manifold-pressure compensator	mm	
1500 1500 2000 2000 2400	12 Volt 0 Volt 12 Volt 0 Volt 12 Volt	0.75 0.75 0.75 0.75 0.75	1.2-1.6 (0.7-2.1) 3.0-4.0 (2.8-4.2) 3.6-4.4 (3.3-4.7) 4.9-6.1 (4.8-6.2) 5.6-6.4 (5.3-6.7)	
Supply pump				
1500	0 Volt	0.75	6.8-7.4 bar	

Differing test specifications for solenoid valve with throttle bore

Timing device

n = min ⁻¹	Solenoid valve	manifold-pressure compensator	nm
1500 1500 2000 2000 2400	12 Volt 0 Volt 12 Volt 0 Volt 12 Volt	0.75 0.75 0.75 0.75 0.75	0.8-1.2 (0.3-1.7 3.0-4.0 (2.8-4.2 3.1-3.9 (2.8-4.2 5.8-7.0 (5.7-7.1 5.0-5.8 (4.7-6.1
Supply pump 1500	0 Volt	0.75	6.8-7.4 bar
1dle 415 min-1 750 min Full load	6.0-10.0 (4 max. 3.0	.0-12.0) ccm/1000 str.	
2850 min-1 2675 min	max. 4.0 10.0-16.0(9	ccm/1000 str. .0-17.0) ccm/1000 str.	

6

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 VWW 2,4 1 3

2. Edition

VE 6/10 F 2400 L 146

Overflow temperature 45° C

supersedes VWW

company: 087

0 460 406 033

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

Rot. speed rev/min			Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³	
1500	2,8-3,2	mm			
1500	5,2-5,8	bar (kgf/cm²)			
1500	28,5-29,5	cm³/1000 strokes		2,5 (3,0	
_	-	cm ³ /1000 strokes			
375	6,0-10,0	cm³/1000 strokes		2,0 (3,0	
100	min. 35	cm³/1000 strokes			
2700	6,0-12,0	cm³/1000 strokes			
-					
	1500 1500 1500 1500 - 375 100	1500 2,8-3,2 1500 5,2-5,8 1500 28,5-29,5 - 6,0-10,0 100 min. 35 2700 6,0-12,0	1500 2,8-3,2 mm 1500 5,2-5,8 bar (kgf/cm²) 1500 28,5-29,5 cm³/1000 strokes - cm³/1000 strokes 100 min. 35 cm³/1000 strokes 2700 6,0-12,0 cm³/1000 strokes	1500 2,8-3,2 mm 1500 5,2-5,8 bar (kgt/cm²) 1500 28,5-29,5 cm³/1000 strokes - cm³/1000 strokes 100 min. 35 cm³/1000 strokes 2700 6,0-12,0 cm³/1000 strokes	

2. Test Spe	cifications	checking values in brackets ()		
2 1 Timing device	n = rev/min	750 750 0,2-1,0(0-1,3) (*)	1500 (2,3-3,7)	1500 2400 (*) 5,7-6,5(5,4-6,8)	
2 2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,8-3,4	1500 (*)	2400 7,7-8,3	
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138 (40-153)	2400 55-138 (40-153)		
	1			T-12-21	

	1		
2 3 Fuel deliveries			
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kg//cm²)
End stop	2825	max. 3,0	
	2700	(5,0-13,0)	
	2400 1500	22,0-24,0 (20,7-25,3) (26,7-31,3)	
	750	26,0-29,0 (24,5-30,5)	
switch-off			
elektr.	400	0	
idle stop	375	(4,0-12,0)	
	600	max. 4,0	
End stop	400	min. 20	
Fug 200b	500	max. 25	
2 4 Solenoid	max cut-in vol		
		xx rated voltage 12V.	

3. Dimen Designation	Sions for assembly and adjustment mm
K	3,2-3,4
KF	6,4-6,7
MS	1,5-1,7
SVS	3,6
a XK	21,8-23,8
b XL	8,9-12,3
Observations	

Please note instructions on sheet 2

6.84

ROSCH

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Timing device

n = min ⁻¹	Solenoid valve	mm
750 1500	0 Volt 0 Volt	·1.2-2.4 (1.1-2.5) 3.7-4.7 (3.5-4.9)
Supply pump		
1500	0 Volt	6.3-6.9 bar

As of FD 445

Timing device

n = min ⁻¹	Solenoid valve	mm
1000	12 Volt	0.6-1.4 (0.3-1.7)
1000	0 Volt	1.8-3.0 (1.7-3.1)
1500	12 Volt	2.8-3.2 (2.3-3.7)
1500	0 Volt	4.1-5.1 (3.9-5.3)
2400	12 Volt	6.0-6.8 (5.7-7.1)
Supply pump		
1500	0 Volt	6.6-7.2 bar

^{*} Do not apply any voltage to the solenoid valve at the points so marked.

WPP 001/4 VWW 2,4 I 2 2. Edition

VE 6/10 F 2400 L 146-1

Overflow temperature 45° C

supersedes 10.83 087 engine:

0 460 406 034

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

1. Settings	Rot speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1500	2,8-3,2	mm		
1 2 Supply-pump pressure	1500	5,2-5,8	bar (kgf/cm²)		
1 3 Full-load delivery with charge air pressure Full-load delivery without	1500	28,5-29,5	cm ³ /1000 strokes cm ³ /1000 strokes		2,5 (3,0)
charge air pressure 1.4 Idle regulation	375	6,0-10,0	cm ³ /1000 strokes		2,0 (3,0)
1.5 Full-speed regulation	100	min. 35	cm ³ /1000 strokes		
1 6 Start	2700	6,0-12,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2. Test Spe	cifications	checking values in brackets	s()		
2 1 Timing device	n = rev/min mm	750 G,2-1,0(0-1,3)	750 1500 (*) (2,3-3,	1500 7) (*)	2400 5,7-6,5 (5,4-6,8)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,8-3,4	1500 (*)	2400 7,7-8,3	
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138 (40-153	3) 5	2400 5-138 (40-153))
-	. 1			3 D	imensions

	Cm 710 S	55-138 (40-153)	33-136 (4
2 3 Fuel deliveries	1		
Speed control lever	Rot speed rev/min	Fuel delivery cm³/1000 strokes	Charge air press bar (kgf/cm²)
End stop	2825 2700 2400 1500 750	max. 3,0 (5,0-13,0) 22,0-24,0 (20,7-25,3) (26,7-31,3) 26,0-29,0 (24,5-30,5)	3)
switch-off			
mech. elektr.	2400 400	0 0	
idle stop	375 600	max. 4,0 (4,0-12	,0)
End stop	400 500	min. 20 max. 25	
2 4 Solenoid	max.cut-in voltage xxx min. 10 V		

3. Dimens	ions for assembly and adjustment
Designation	mm
к	3,2-3,4
KF	6,4-6,7
MS	1,5-1,7
svs	3,6
A XK	21,8-23,8
B XL	8,9-12,3

Please note instructions on sheet 2

Timing device

Solenoid valve	mm	
0 Volt 0 Volt	1.2-2.4 (1.1-2.5) 3.7-4.7 (3.5-4.9)	
		,
0 Volt	6.3-6.9 bar	
	0 Volt 0 Volt	0 Volt 1.2-2.4 (1.1-2.5) 0 Volt 3.7-4.7 (3.5-4.9)

As of FD 445

Timing device

n = min ⁻¹	Solenoid valve	mm
1000 1000 1500 1500 2400	12 Volt 0 Volt 12 Volt 0 Volt 12 Volt	1.8-3.0 (1.7-3.1) 2.8-3.2 (2.3-3.7) 4.1-5.1 (3.9-5.3) 6.0-6.8 (5.7-7.1)
Supply pump		
1500	0 Volt	6.6-7.2 bar

^{*} Do not apply any voltage to the solenoid valve at the points so marked.

Testoli-150 411

Test Specifications Distributor-type Fuel-injection Pumps

70

WPP 001/4 VWW 1,6 W 3

3. Edition

En .

VE 4/9 F 2250 R 149 0 460 494 138 Overflow temperature 45° C

supersedes 3.84 company: VWW engine: 086 T

All test specifications are valid only for Bosch Fuel injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/

Pre-stroke setting	= mm
r <u></u>	Rot speed

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	1500	3,8-4,2	mm	0,75	
1 2 Supply-pump pressure	1500	4,6-5,2	bar (kgf/cm²)	0,75	
1 3 Full-load delivery with	600	23,5-24,5	cm ³ /1000 strokes	0	
charge air pressure Full-load delivery without	1500	43,5-44,5	cm³/1000 strokes	0,75	2,5 (3,0)
charge air pressure 1 4 Idle regulation	475	6,0-10,0	cm ³ /1000 strokes	0	2,0 (3,0)
1 5 Full-speed regulation	2525	9,0-15,0	cm ³ /1000 strokes	0,75	
1 6 Start	100	min. 35,0	cm³/1000 strokes	0	
1.7 Load-dependent port-closing	-				

2. Test Spec	ifications	ct
2.1 Timing device	n = rev/min	

checking values in brackets (

		production in the second comment with the second		
	n = rev/min	1000	1500	2250
	mm	1,8-2,6 (1,5-2,9)	(3,3-4,7)	6,1-6,9 (5,8-7,2)
r				

LDA=0,75 bar
22 Supply pump
n = rev/min
bar (kgf/cm²)
2,5-3,1
2250
6,5-7,1

verflow delivery n = rev/min 600 2250 (0,75 bar) cm^{3/10} 55-138 (40-153) 55-138 (40-153)

	2	3	Fuel	deliveries	
--	---	---	------	------------	--

Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)
End stop	2750 2525 2250 1500 1000 * 600	max. 3,0 (8,0-16,0 38,0-39,0 (36,7-41) (41,8-46) 33,5-34,5 (31,8-36) (21,0-27)	,3) 0,75 ,2) 0,75 ,2) 0,3
switch-off elektr.	400	0	
End Stop	475 1200 400 500	(4,0-12,0 max. 5,0 min. 22,0 max. 30,0	0)

XXXXXXXXXXXXXXXXXXXXXXX min. 10.0 V

3. Dimer		ions tor assembly and adjustmen
	Designation	mm

к		2 2 2 4
κ	F	3,2-3,4 5,7-6,0
~	ıs	1,2-1,4
s	vs	4.4
** F	H	1,8-2,4
X	K .	18,4-20,4
X	L	8,6-12,0
A		
е	1	

Observations

- *Manifold-pressure compensator stroke = 4,0 mm Correction at the adjusting nut (46)
- *operating

stroke (KSB)

BOSCH

2.4 Solenoid

WPP 001/4 CUM 5,9 i

1. Edition

VE 6/12 F 1250 R 159-1

0 460 426 041

Pre-stroke setting

DHK: 1 688 901 016/207 +3bar

Overflow temperature 45° C

supersedes Cummins company: 6 BT-590

114 kW bei 2500 1/min

All test specifications are valid only for Bosch Fuel-Injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/

1. Settings	Rot speed	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	750	3,1-3,5	mm		
1 1 Timing device travel	750	3,6-4,2			
1.2 Supply pump pressure			bar (kgf/cm²)		İ
1.3 Full-load delivery with	_		cm ³ /1000 strokes		0 (4.5)
charge air pressure	1100	80,0-81,0	cm ³ /1000 strokes		4,0 (4,5)
Full load delivery without charge air pressure	375	22,0-28,0	cm³/1000 strokes		3,0 (4,5)
1.4 Idle regulation	4000	FA F C2 F	CIII-V 1000 Silokes		
1 5 Full-speed regulation	1300	54,5-62,5	cm ³ /1000 strokes		
1 3 Full speed regulation	100	min. 97.0	cm³/1000 strokes	1	
1 6 Start			Cilis 1000 Silokes		
1 7 Load-dependent port-closing	-				

2. Test Spe		checking values in brackets ()	750	110		
2 1 Timing device	n ≈ rev/min mm	1,1-1,9 (0,8-2,2)	(2,6-4,0)	5,0-5,8	(4,7-6,1)	
2 2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,5-3,1	2,5-3,1		1100 5,1-5,7	
Overflow delivery	n = rev/min cm³/10 s	500 55-138 (40-153)	5	1250 5-138 (40-1	53)	
2 3 Fuel deliveries				3. Dimer	and adjustment	
Speed control tever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	Designation	mm	
End stop	1390 1300 1250 1100 750	max. 1,5 (53,5-63,5) 75,0-78,0 (73,5-79,5) (77,5-83,5) 84,5-88,5 (82,8-90,2) 81,5-85,5 (79,8-87,2)		K KF MS SVS	5,1-5,3 1,4-1,6 1,2	
switch-off ELAB	375			AXK BXL	20,2-22,2	
Idle stop	300 375 450 130 200	45,0-53,0 (44,0-54,0) (20,0-30,0) max. 1,5 min. 97,0 max. 85,0		Observations Pulling electromagnet 24 V		
2 4 Solenoid	max cut-in volta					

WPP 001/4 CDC 5,9 a 1. Edition

VE 6/12 F 1100 R 159-2 0 460 426 042

Overflow temperature 45° C

company:

6 BT 590-106 kW

DHK 1688 901 016/207 + 3 bar

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

 $_{mm}$ $^{\pm}0,92$ (0,04)

see VDT-W-460/

1. Settings	Rot speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
t a Times de des travel	750	3,1-3,5	mm		
1.1 Timing device travel 1.2 Supply-pump pressure	750	3,6-4,2	bar (kgf/cm²)		
1.3 Full-load delivery with	-		cm³/1000 strokes		
charge air pressure Full-load delivery without	900	82,0-83,0	cm ³ /1000 strokes		4,0 (4,5)
charge-air pressure	375	22,0-28,0	cm ³ /1000 strokes		3,5 (4,5)
1 5 Full speed regulation	1220	34,0-40,0	cm³/1000 strokes		
1 6 Start	100	min. 97	cm ³ /1000 strokes		
1.7 Load dependent port-closing				·	

2. Test Specifications checking values in brackets ()						
2.1 Timing device	n - rev/min	500 1,2-2,0(0,9-2,3)	750 1100 (2,6-4,0) 5,1-5,9 (4,8-6,2)			
2 2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,6-3,2	1100 5,0-5,6			
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138 (40-153)	1100 55-138 (40-153)			
	j					

O (c)o C (o.,	cm ³ /10 s	55-138 (40-153)		55-138 (40-153)
2 3 Fuel deliveries Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	3. Dimen	tor assembly and adjustment
End stop	1280 1250 1220 1100 900 750 500	max. 1,5 6,0-14,0 (5,0-15,0) (32,0-42,0) 75,0-78,0 (73,5-79,5) (79,5-85,5) 81,0-85,0 (80,0-86,0) 79,0-83,0 (77,3-84,7)		K KF MS SVS	5,1-5,4 1,4-1,6 1,2
switch-off				A XK	20,2-22,2
Idle stop	300 375 450 130 200	47,0-55,0(46,0-56,0) (20,0-30,0) max. 1,5 min. 97 max. 85	o	Observations	
2.4 Solenoid	max cut-in vo	Hage XXX min. 10 V rated voltage 12V.			

(7)

VE 6/12 F 1100 R 159-8 Overflow temperature 45° C

0 460 426 050

DHK: 1 688 901 016/207+3 bar

supersede Cummins company 6 BT - 590

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,3

±0,02 (0,04)

see VDT-W-460/

Rot speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
750 750	3,1-3,5 3,7-4,3	mm bar (kgf/cm²)		
900	73,0-74,0	cm³/1000 strokes cm³/1000 strokes		4,0 (4,5)
375	18,5-24,5	cm³/1000 strokes		3,5 (4,5)
1175	28,0-34,0	cm³/1000 strokes		
100	min.97,0	cm ³ /1000 strokes		
	750 750 750 - 900 375 1175	750 3,1-3,5 750 3,7-4,3 900 73,0-74,0 375 18,5-24,5 1175 28,0-34,0	750 3,1-3,5 mm 750 3,7-4,3 bar (kgf/cm²) - cm³/1000 strokes 375 18,5-24,5 cm³/1000 strokes 1175 28,0-34,0 cm³/1000 strokes cm²/1000 strokes	750 3,1-3,5 mm 750 3,7-4,3 bar (kgf/cm²) - cm³/1000 strokes 900 73,0-74,0 cm³/1000 strokes 375 18,5-24,5 cm³/1000 strokes 1175 28,0-34,0 cm³/1000 strokes cm³/1000 strokes

2. Test Spe	ecifications	checking values in brackets ()	
2 1 Timing device	n ~ rev/min mm	400 0,3-1,1 (0-1,4)	750 (2,6-4,0)	1100 5,4-6,2 (5,1-6,5)
2 2 Supply pump	n = rev/min bar (kgf/crn²)	400 2,2-2,8		1100 5,2-5,8
Overflow delivery	n = rev/min cm ³ /10 s	400 55-138 (40-153)		1100 55-138 (40-153)
				3. Dimensions

2 3 Fuel deliveries	3. Dimer	ISIONS for assembly and adjustment			
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	Designation	mm
End stop	1250 1175 1100 900 750 400	max. 1,5 (26,0-36,0) 66,0-69,0(64,5-70,5) (70,5-76,5) 74,5-78,5(72,8-80,2) 88,0-92,0(86,3-93,7)		K KF MS SVS	5,1-5,3 1,4-1,6 1,2
switch-off				A	
ELAB	375	0		8	
Idle stop	300 375 450 130 200	47,0-55,0 (46,0-56,0) (16,5-26,5) max. 1,5 min. 97 max. 90		Observations	*
2 4 Solenoid	max. cut-in volt	age xxx min. 10 V rated voltage 12V.			

Festoil-ISO 4113

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 CUM 5,9 K 1. Edition

VE 6/12 F 1000 R 159-10

Overflow temperature 45° C

0 460 426 052

Nozzle-and-holder assembly 1 683 901 016/207 ± 3 bar

supersedes

company: Cummins

6 BT 5.9 engine:

2000 1/min 65 kW /

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,3

mm $\pm 0.02(0.04)$

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	750	4,0-4,4	mm		
1.2 Supply-pump pressure	750	4,1-4,7	bar (kgf/cm²)		
1.3 Full-load delivery with	-		cm³/1000 strokes		
charge-air pressure Full-load delivery without	900	53,0-54,0	cm ³ /1000 strokes		4,0(4,5)
charge-air pressure 1.4 Idle regulation	375	27,0-33,0	cm ³ /1000 strokes		3,5(4,5)
1.5 Full-speed regulation	1050	28,0-34,0	cm ³ /1000 strokes		
1.6 Start	100	min. 97,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing					

2. Test Spec	ifications	checking values in brack	ets ()			
2.1 Timing device	n = rev/min mm	1,4-2,2	400 (1,1-2,5)	750 (3,5-4,9)	1000 6,0-6,8 (5	
2.2 Supply pump	n = rev/min bar (kgf/cm²)	2,5-	400 -3,1		1000 5,2-5,8	
Overflow delivery	n = rev/min cm ³ /10 s	55-138 (490 (40-153)	55	1000 -138 (40-15	3)
2.3 Fuel deliveries	<u> </u>				3. Dimen	for assembly
Spaed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment
End stop	1100 1050 1000 900 750 400	48,5-51,5 (4)	0,5-56,5) 1,8-59,2)		K KF MS SVS	5,1-5,3 1,4-1,6 1,2
switch-off ELAB	375				В	
Idle stop End stop	375 400 450 130 200	10,5-18,5 (29) max. 1,5 min. 97 max. 85	5,0-35,0) 9,5-19,5)		Observations 24 V Pulling electromagnet	
2.4 Solenoid	cut-in voltag	e				
	1				<u></u>	

WPP001/4 CUM 5,9 h 1. Edition

En

VE 6/12 F 1000 R 159-11

Test Cresifications

Overflow temperature 45° C

supersedes

Cummins company:

0 460 426 053

6 BT 590 engine:

Nozzle-and-holder assembly 1 688 901 016/207 + 3 bar

2000 1/min 65 kW /

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

 $mm \pm 0.02 (0.04)$ 0.3

see VDT-W-460/...

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1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	750	4,0-4,4	mm		
1.2 Supply-pump pressure	750	4,1-4,7	bar (kgf/cm²)		
1.3 Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	900	53,0-54,0	cm ³ /1000 strokes		4,0 (4,5)
charge-air pressure 1.4 Idle regulation	375	27,0-33,0	cm ³ /1000 strokes		3,5 (4,5)
1.5 Full-speed regulation	1050	28,0-34,0	cm ³ /1000 strokes		
1.6 Start	100	min. 97,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2.1 Timing device	n = rev/min	400	750	10	000
•	mm	1,4-2,2 (1,1-2,5)	(3,5-4,9	6,0-6,8	(5,7-7,1)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400		1000	
	Dai (kgi/ciii-)	2,5-3,1		5,2-5,8	
Overflow delivery	n = rev/min	400		1000	- 1
	cm ³ /10 s	55-138 (40-153)	55	-138 (40-15	
2.3 Fuel deliveries				3. Dimen	for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm3/1000 strokes	Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	1100	max. 1,5		K	_
	1050	(26,0-36,0)		KF	5,1-5,3
	1000	48,5-51,5 (47,0-53,0)			'
	900	(50,5-56,5)		MS	1,4-1,6
	750	53,4-57,5 (51,8-59,2)		svs	1,2
	400	50,0-54,0 (48,3-55,7)			
switch-off				A	
ELAB	375			В	
Id le stop				Observations	
	375	(25,0-35,0) 10,5-18,5 (9,5-19,5)			
	400				
End ston	450	max. 1,5			
End stop	130 200	min. 97 max. 85			
2.4 Solenoid	cut-in voltaç	min. 10V rated voltage 12 V.			

WPP 001/4 PEU 1,9 b

2. Edition

VE 4/9 F 2300 R 162

0 460 494 153

Test pressure line 6x2x450 mm / 1 680 750 073

supersede Peugeot company: TUD 9

DHK: 1 688 901 022/130 bar

Overflow temperature 45° C

Test instructions and Test Equipment

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers Pre-stroke setting mm

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	2000	7,8-8,2	mm		
1 2 Supply-pump pressure	1250	3,9- 4,5	bar (kgf/cm²)		
1.3 Full-load delivery with charge air pressure Full-load delivery without	1250	28,8-29,8	cm ³ /1000 strokes cm ³ /1000 strokes		2,5(3,
charge-air pressure # 1 4 Idle regulation	A 550	3,5- 4,5	cm ³ /1000 strokes		B 2,5(3,
1 5 Full-speed regulation	2400	19,3-25,3	cm ³ /1000 strokes		
1 6 Start	100	min. 44,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	1250	·			

2. Test Spe	cifications)		
2 1 Timing device	n = rev/min mm	700 0,5-1,5(0,3-1,7) 3	1250 ,4-4,2(3,1-4,5)	_	000 3-8,7)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	700 2,3-2,9			000 9-6,5
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-153)			300 8(40-153)
2.3 Fuel deliveries	_L			3. Dimen	ISIONS tor assembly and adjustment
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	Designation	mm
End stop	2650 2500 2400 2250 2000 1250 700	max. 7,0 10,7-16,7 (9,7-17,7 (18,3-26,3 28,9-30,9 (27,6-32,2 29,7-31,7 (28,4-33,0 (27,0-31,6 29,5-32,5 (28,0-34,0) } }	K KF MS SVS	3,2-3,4 5,7-6,0 1,3-1,5 3,0
switch-off	2300	0		A B	
tdle stop	A 550 B 350 C 470	3,5- 4,5 8,0-12,0 (6,0-14,0) 8,0-12,0 (6,0-14,0) min. 40,0		setting	ol delivery g idle setting s per VDT-I-
2 4 Solenoid	300 max. cut-in volteg	max. 35,0		400133	

WPP 001/4 FIA 3,9 a 2. Edition

Overflow temperature 45° C

Fiat

company: 8045.05.200 engine

VE 4/11 F 1250 L 164

0 460 414 013 DHK: 1 688 904 020

All test specifications are valid only for Bosch Fuel-Injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

 $\pm 0,02 (0,04)$ 0,2 Pre-stroke setting

800 800 -	3,8-4,2 5,1-5,7	mm bar (kgf/cm²)		
-			1	1
800	73,5-74,5	cm³/1000 strokes		3,5(4,0)
350	21,0-25,0	cm³/1000 strokes		3,5(4,0)
350	29,0-35,0	cm³/1000 strokes		
100	min. 80,0	cm ³ /1000 strokes		
	350	350 21,0-25,0 350 29,0-35,0	350 21,0-25,0 cm ³ /1000 strokes 350 29,0-35,0 cm ³ /1000 strokes	350 21,0-25,0 cm ³ /1000 strokes 350 29,0-35,0 cm ³ /1000 strokes

2. Test Spe	ecifications	checking values in brackets ()	
2.1 Timing device	n = rev/min mm	1,2-2,0 (0,9-2,1)	800 (3,3-4,7)	7,6-8,4 (7,3-8,7)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	500 3,6-4,2		1250 7,0-7,6
Overflow delivery	n = rev/min cm³/10 s	500 55-138 (40-153)		1250 55-138 (40-153)
				3. Dimensions

	Ciliarios				
2 3 Fuel deliveries				3. Dimen	ang agjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	1430 1380 1350 1250 800 500	max. 1,0 6,0-16,0(6,5-15,5) (27,5-36,5) 69,5-72,5(68,3-73,7) (71,3-76,7) 64,0-67,0(62,1-68,9)		K KF MS SVS	5,4-5,6 1,5-1,7 5,0
switch-off	1250	0		A B	
idle stop	500 425 350 150	max. 2,0 4,0-10,0 (2,5-11,5) (18,5-27,5) min. 90,0		Observations	
2.4 Solenoid	max cut-in vo	max. 65,0			

BOSCH

WPP 001/4 MAN 5,6 p1

1. Edition

VE6/12 F 1100 R 166-1

Overflow temperature 45° C

supersedesMAN

company: D 0226 MT E 51

engine:

0 460 426 040

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers 0,2

Test Instructions and Test Equipment

Pre-stroke setting

² 0,02 (0,04)

see VDT-W-460/.

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing device travel	700	3,3-3,7	mm		
1 2 Supply-pump pressure	700	4,3-4,9	bar (kgf/cm²)		
1 3 Full-load delivery with	-		cm³/1000 strokes		
charge-air pressure Full-load delivery without	700	90,5-91,5	cm³/1000 strokes		4,0 (4,5)
charge-air pressure 1 4 Idle regulation	300	13,0-19,0	cm³/1000 strokes		3,5 (4,5)
1.5 Full-speed regulation	1230	18,0-24,0	cm ³ /1000 strokes		
1 6 Start	100	min. 80,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	700	-			

2. Test Spe	ecifications	checking values in brackets ()	
2 1 Timing device	n = rev/min mm	500 1,5-2,3 (1,2-2,6)	700 (2,8-4,2)	900 3,7-4,5 (3,4-4,8)
2 2 Supply pump	n = rev/min bar (kgf/cm²)	3,3-3,9 500		1100 5,9-6,5
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40-153)		1100 55-138(40-153)

	cm ³ /10 s	33 135(43 133)			(10 100)
2 3 Fuel deliveries				3. Dime	1Sions
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge air press bar (kgf/cm²)	Designation	and adjustme
End stop	1280 1230	max. 1,0 (16,0-26,0)		к	_
	1170	70,0-78,0 (69,0-79,0)		KF	5,7-5,9
	1100	89,5-92,5 (88,0-94,0)		MS	0,9-1,1
	900 700 500	91,0-95,0 (90,0-96,0) (88,0-94,0) 91,0-95,0 (89,3-96,7)		svs	2,5
switch-off		3,,6 30,6 (03,6 30,7)		A	
idle stop	370 330	max. 1,0 3,0-9,0 (1,0-11,0) (11,0-21,0)		Observations	
End stop	300 350 450	min. 101 max. 101			
2.4 Solonoid	max. cut-in volt	ege xxx min. 10 V rated voltage 12V.			

WPP 001/4 VMA 2.2 b 2. Edition

1600

(4,0-5,4)

VE 4/10 F 2100 L 168 0 460 404 038

Overflow temperature 45° C

VM Motori

company: HR 492 HT engine:

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

mm

2. Test Specifications checking values in brackets (

max. cut-in voltage XX 其OF其代外科P

n = rev/min

mm

Test Instructions and Test Equipment

2100

7,0-7,8 (6,7-8,1)

see VDT-W-460/...

Pre-stroke setting

2 1 Timing device

LDA=0,8 bar

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kg1/cm²)	Difference in delivery cm ³
	1600	4,5 - 4,9	mm	0,8	
1 1 Timing device travel	1600	5,6 - 6,2	bar (kgf/cm²)	0,8	
1 2 Supply-pump pressure	1600	59,0 - 60,0	cm ³ /1000 strokes	0,8	3,0 (3,5)
1 3 Full-load delivery with charge-air pressure Full-load delivery without	1600	37,5 - 40,5	cm ³ /1000 strokes	0	
charge:air pressure 1 4 Idle regulation	400	16,0 - 20,0	cm ³ /1000 strokes	0	2,5 (3,5)
1.5 Full-speed regulation	2300	27,0 - 33,0	cm ³ /1000 strokes	0,8	
1 6 Start	100	min. 55,0	cm³/1000 strokes	0	
1.7 Load-dependent port-closing	4				

1000

0,9-1,7 (0,6-2,0)

22 Supply pump LDA=0,8 bar	n = rev/min bar (kgf/cm²)	400 1,5-2,1		2100 7,2-7,8	
Overflow delivery	n = rev/min cm³/10 s	500 55-138 (40-153)		55-138 (40	100 -153)
2 3 Fuel deliveries Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	3. Dimen	sions tor ass and ad mm
End stop	2450 2300 2100 1600 1600 * 700 600	2,0 - 8,0 (0,5-9,5) (25,5-34,5) 51,8-54,2 (48,5-57,5) (36,3-41,7) (56,8-62,2) 50,0-51,0 (47,1-53,9) 41,5-42,5 (38,6-45,4)	0,8 0,8 0,8 0,8 0 0,8 0,4	K KF MS SVS	3,2 5,7 0,7
switch-off	2100	0		8	
Idle stop	600 450 400 400 500	max. 1,0 3,5-9,5 (2,0-11,0) (13,5-22,5) min. 52,0 max. 46,0		Observations Manifold compensat = 6,1 mm Correction adjusting	tor st on at

3. Dimen	Sions for assembly and adjustment mm
K	3,2 - 3,4
KF	5,7 - 5,9
MS	0,7 - 0,9
svs	3,6
B	
Observations	
compensat = 6,1 mm Correction	-pressure tor stroke on at the g nut. (46).

2 4 Solenoid

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.
1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Flobert Bosch GmbH.

xxx min. 10 V rated voltage 12V.

Testoil-ISO 4113

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 PEU 1,7 a

2. Edition

En

VE 4/8 F 2300 R 171

0 460 484 010

Test pressure line 6x2x450 mm / 1 680 750 073

supersede Pougeot company Peugeot XUD 7

DHK: 1 688 901 022/130 bar

Overflow temperature 45° C

Test Instructions and Test Equipment

2222

Pre-stroke setting

mm

2. Test Specifications checking values in brackets (

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

see VDT-W-460/...

1. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Different deliver	
1 1 Timing device travel	1250	3,8- 4,2	mm			
1.2 Supply-pump pressure	1250	4,3- 4,9	bar (kgf/cm²)	:		
1 3 Full-load delivery with	-	-	cm ³ /1000 strokes			
charge-air pressure Full-load delivery without	1250	29,5-30,5	cm³/1000 strokes		ļ	2,5(3,0
charge-air pressure 1 4 Idle regulation	A 550	3,5- 4,5	cm³/1000 strokes		В	2,0(3,0
1 5 Full-speed regulation	2400	19,0-25,0	cm ³ /1000 strokes		-	
1 6 Start	100	min. 42,0	cm ³ /1000 strokes			
1.7 Load-dependent port-closing	1250					

2 1 Timing device	n = rev/min	700 0,8-1,6(0,5-1,9)	1250 (5,3-4,7)	2000 3,0-8,8(7,7-9,1)	
2 2 Supply pump	n = tev/min bar (kgf/cm²)	700 2,8-3,4		2000 6,4-7,0	
Overflow delivery	n = revimin cm ³ /10 s			2300 55-138(40-153)	
2 3 Fuel deliveries Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	3. Dimensions tor assembly and adjustment mm	
End stop	2650 2500 2400 2250 2000 1250 700	max. 7,0 11,5-17,5 (10,5-18,5) (18,0-26,0) 28,0-30,0 (26,7-31,3) 29,0-31,0 (27,7-32,3) (27,7-32,3) 29,5-32,5 (28,0-34,0=		K 3,2-3,4 KF 5,2-5,5 MS 1,3-1,5 Svs max. 3,0	
switch-off	2300	0		В	
idle stop	A 550 B 350 C 470	3,5 - 4,5 8,0 -12,0 (6,0-14,0) 8,0 -12,0 (6,0-14,0)		Observations Residual delivery setting idle setti (LFG) as per VDT-I	
End stop	200 300	min. 44,0 max. 34,0		460135	

2 4 Solenoid

max. cut-in voltage

xx min

test voltage 12V

46

WPP 001/4 STE 5,0 f 1. Edition

<u>En</u>

VE 6/11 F 1150 R 172 U 460 416 032 Overflow temperature 45° C

supersedes companditeyr engine:WD 611.87

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,2

mm

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1 1 Timing devices travel	800	3,5 - 3,9	mm	0,8	
1 1 Timing device travel	800	5,4 - 6,0	bar (kgl/cm²)	0,8	
1.2 Supply-pump pressure 1.3 Full-toad delivery with	800	70,0 - 71,0	cm ³ /1000 strokes	0,8	
charge-air pressure Full-load delivery without	500	53,5 - 54,5	cm³/1000 strokes	0	
charge-air pressure	250	6,0 - 20,0	cm³/1000 strokes	0	
1 5 Full speed regulation	1200	37,0 - 43,0	cm ³ /1000 strokes	0,8	,
1 6 Start	100	min. 80	cm ³ /1000 strokes	0	
1.7 Load-dependent port-closing					

2 1 Timing device	n = rev/min	600	800		1130
LDA = 0,8 bar		1,4 - 2,2 (1,1-2		4,4) 6,8-7	,6 (6,5-7,9)
2 2 Supply pump	n = rev/min	500		•	130
LDA = 0.8 bar	bar (kgl/cm²)	3.8 - 4,4		6,8	- 7,4
Overflow delivery	n = rev/min cm ³ /10 s	500(0 bar) 55-138 (40 - 153)			150 (0,8 bar) 8(40-153)
2 3 Fuel deliveries	L			3. Dimen	for assembly
Speed control lever	Rot speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press bar (kgf/cm²)	Designation	and adjustment mm
End stop	1310 1250 1200 1130 800 * 500 500	max. 10 14,5 - 21,5 (13,5- (35,5- 71,0 - 74,0 (69,8- (67,8- 61,5 - 62,5 (58,6- (50,6-	40,5) 0,8 75,2) 0,8	K KF MS SVS	- 5,2 - 5,5 1,3 - 1,5 4,0
switch-off				B	
Idle stop	380 330 250 170 250	max. 1,0 min. 2,0 (13,5 - 3 min. 80 max. 50	1 1	old-pressure sator stroke o	
2 4 Solenoid	max. cut-in voita	ge	1	-	

test voltage

11)

150

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 CUM 5,9 g 1 . Edition

supersedes

company:

Cummins 6 BT-590

engine:

Overflow temperature 45° C

DHK: 1688 901 016 All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

mm

Test Instructions and Test Equipment

Pre-stroke setting

0 460 426 038

VE 6/12F 1400 R173

0,3

0,02 (0,04)

see VD1-W-460/...

. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1100	2,0-2,4	mm	0,75	
1 1 Timing device travel	1100	4,3-4,9	bar (kgf/cm²)	0,75	
1 2 Supply-pump pressure	1100	86,0-87,0	cm ³ /1000 strokes	0,75	4,0 (4,5
1 3 Full-load delivery with charge-air pressure	500	73,5-74,5	cm³/1000 strokes	0	
Full-load delivery without charge-air pressure	375	20,0-26,0	cm³/1000 strokes	0	3,5 (4,5
1.4 Idle regulation	1600	31,0-39,0	cm ³ /1000 strokes	0,75	
1.5 Full-speed regulation	100	min. 97,0	cm ³ /1000 strokes	0	
1 6 Start 1 7 Load dependent port closing	100	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5117 7 1000 SWONGS		

2. Test Specific	ations	checking values in brackets ()		
21 Timing device n = re LDA = 0,75 barmm	ev/min	900 0,4-1,2 (0,1-1,5)	1100 (1,5-2,9)	2,9-3,7	1400 (2,6-4,0)
22 Supply pump n = 10 LDA = 0,75 bay ^{bar (l}	ev/min kgf/cm²)	500 2,0-2,6	ay apparatus kan ka appagaga kada katali k alabah keminin	1400 5,6-6,2	
Overflow delivery n = ro cm ³ /	ev/min 10 s				

),75),75),75),75),75
.,

3. Dimen	SIONS tor assembly and adjustment
Designation	mm
к	_
KF	5,1-5,9
MS	1,4-1,6
svs	2,4
8	
Observations	

Stop check electric shutoff device at 375 min/1. Manifold-pressure compensator stroke =4,5 mm

BOSCH

WPP 001/4 MB 5,7 11 1. Edition

En

PES 6 A 80 C 410 RS 2085 EP/RSV 300-900 A 7 B 528

supersedr #

company Daimler-Benz

endine OM 352

Aggregat - 75 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15-2,25 (2,10-2,30)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm /100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm ¹ /100 strokes	mm 6
1000	9	5.5-6.0	0,4			
	6	2,2-3,0				
200	15 6	2,2-3,0 11,5-12,8 1,3-2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	r rated speed		Interm	ediate ra	ted spired	4	Low	er rated speed	3 10	rque control
Degree of deflection	travel	Control rod travel				Control lever deflection	rev/min	travel	rev/min	travel
of control lever	mm 2	mm rev/min	4	5	6	in degrees	8	9	10	11
ca.49,5	900 920 930	16,0 9,6 4,8	with		uxiliar = 0,5	y sprin	9	•	-	-
ca.48	900 920 950	7,5-8,0 2,4-3,7 0 - 1.0	with	auxi **	liary s	pring				

Set idle auxiliary spring so that 2.5 mm control-rod travel is reached at n=920-930 min/1 The numbers denote the sequence of the tests

C. Settings for Fuei Injection Pump with Fitted Governor

	ill load slop	6 Rotational speed limital	39 Fu	iel delivery paracteristics	Starting (uel delivery 5		e stop
Test oil to	emp 40 C (104 F) cm ^{-/} /1000 strokes 2	Note changed to 1 rev/min 3	rev/min	cm·/1000 strokes 5	rev/min	cm ¹ /1000 strokes 7		Control rod travet mm 9
880	48,0-50,0 (46,5-51,5)	900	-	-	100	13,2-13,8 mm RW	-	-

Checking values in brackets

* 1 mm less coption to the things col 2

4.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuftgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

Testoil-ISO 4113

40

WPP 001/4 MB 5,7 L 3. Edition

En

PES 6 A 80 C 410 RS 2085

EP/RSV 575-1100 A 7 B 533 DL

supersedes 6.70

company Daimler-Benz

engine OM 352

Komb.-Nr. 0 400 876 174

Mandrescher - 108 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2, 15-2, 25
Port closing at prestroke (2, 10-2, 30)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/min	mm 2	cm /100 strokes	cm ^{-/} 100 strokes	mm	cm ¹ /100 strokes	mm 6
1000	9	5,5-6,0	0,4	-		
	6	2,2-3,0 11,5-12,8 1,3-2,2	7			
200	15 6	1,3-12,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interm	ediate rate	d speed	Control- lever deflection in degrees 7	Lower	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.56,	1100 1110 1120	12,0 wi 7,0 2,4		auxil x = 1,		pring.25	575 200 575	5,0 19-21 4,7-5,3	1080 900 650	0 0,1-0,3 0,3-0,5
ca.56	1100 1130 1180	8,2-9,4 3,0-4,4 0 - 1,0	1	h auxi'	liary :	pring	600 660	2,8-4,0 0 - 1,0		0,0 0,0

The numbers denote the sequence of the tests $\frac{140}{1}$ Set idle auxiliary spring so that 3.0 mm control-rod travel is reached at n = 1140 - 1150 min/1.

C. Settings for Fuel Injection Purnp with Fitted Governor

(J)	ull load stop emp 40°C (104 F)	Rotational- speed limitat		uel delivery naracteristics	Starting tidle	luel delivery 5	48) Idle stop		
rev/min	cm ¹ /1000 strokes	changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min	cm ¹ /1 00 0 strokes 7	rev/min 8	travel mm 9	
1230	56,0-57,0 (54,5-58,5)	1100	800	52,5-55,5 (51,0-57,0)	100	13,2-13,8 mm RW	575	5,0	
			500	48,0-51,0 (46,5-52,5)					

Checking values in brackets

xx ሂደ ደፍር የአማር የተመመመ መመመ

4.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany tmprime en Republique Fédérale d. Altemagne par Robert Bosch GmbH.

40

WPP 001/4 RAB 9,7a 2 1 Edition

PES 6 A 95 D 410 RS 2108

RQ 200/1000 AB 647 L

supersedes company.Raba

Komb.-Nr. 0 400 846 270

engine. D 2156 HM 6

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1.65-1.85)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1000	9,0	7,5-8,0	0,35(0,6)			
	6,0	3,2-4,2				
200	6,0	0,5-1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	g of slider ck (1	Full-load :	•	•	cifications (4)	Idle spec	_		cifications (5)	Torqu e c		3
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel rnm 5	rev/min 6	rev/min 7	Control rod travel rn rn 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12	
450	15,7-16,3	450	16,0	1000 1040 1080 1100	15,7-16,0 4,0-12,0 0-4,6 0	440	0	100 200 300 340	7,0-8,1 4,6-6,7 0 - 2,6 0	-	-	

Torque-control travel on flyweight assembly dimension a =

mп

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics 3b	Starting to Idle spee	Control
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	cm ³ /1000 strokes / mm 7
1000	107,5-109,5 (105,5-111,5)		700 500	104,5-107,5 (102,0-110,0 108,5-111,5 (106,0-114,0)	-	-

Checking values in brackets

9.84

BOSCH

WPP 001/4 0MB 7,4 b

2. Edition

estoil-ISO 4113

PES 6 A 90 D 410 RS2494

RQ 275/1300 AB954D (1)

supersedes 5.76 company OMB

PES 6 A 90 D 410 RS2502

RQV 250-1300 AB961D (2)

CP 3 - 130

Komb.-Nr. 0 400 846 375 (1)

0 400 846 386 (2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prest	_	2,10-2,30)	mm (from BDR)	I = 9,0-1	2,0 mm; Zyl.	6
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control/valve
roy/min	mm 2	cm '/100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm ¹ /100 strokes 3	mm 6
1300	14,0+0,	8,2 - 8,3	p,3(0,45)	12,2+0,1	8,4 - 8,5	
?	İ	į		1	1	

8,9-9,1 1,1-1,7 0.2(0.4) 9,9-10,1 2,9-3,3

Adjust the fuel delivery from each outlet according to the values in $-\lceil\frac{n-1}{2}\rceil$

B. Governor Settings

RQ .. 954D

	Control rod avel	Full load s Setting po rev/min		Test spec	chications Control rod travel mm	Idle spec Setting p	Control rod travel	Test spe	cifications Control rod travel mm	rev/min	Control rod travet
1050	15,0-15.8	1050	15,4	1320 1390 1440 1530	14.0-15.4 7.4-12.0 0 - 3.2 0]	0	100 250 400 530	6,4-8,1 5,0-7,9 2,0-4,2	700 900	15,6-15,8 15,4-15,6

Torque control travel on flyweight assembly dimension a 0,2

Speed regulation At 345 - 1360 =

1 mm tess control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full load di governor c Test oil ten	elivery on control lever np. 40° C (104 F)	Control rod stop	Fuel deliv	ery characteristics	Starting fuel delivery		
revimin 1	cm ⁻ /- 1000 strakes 2	rev/min 3	rev/min 4	cm'/-1000 strokes 5	rev/min	cm ³ /100 strokes	
1300	81,5 - 82,5 (79,5 - 84,5)	600	800	78, 5 - 81, 5 (76, 5 - 83, 5)	-	-	
<u>.</u>			500	72,0 - 75,0 (70,0 - 77,0)			
			•		1455- Cont	1465 rol switch	

Checking values in brackets

5.84

Geschaftsbereich KH. Kundendienst. Kfz Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D. 7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d Allemagne par Robert Bosch GmbH.

Upper rated spec	ea 💮		Lower rated	Speco		Chalanacl	eeve travel			
deflection Cr	v/min nntrot odtravel	Control rod (1a) travel mm rev/min (2a)	Degree of deflection of control lever		Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
ca.66	1350	15,0-17,6	-	-	-	ca.21	100 250	min.11,5		1,0-2.0 4,0-4,5
	11,3 4,0 1600	1340-1350 1465-1495 0 - 1,0				250-70		840=2,0	1350	8,2

forque control travel a 0,2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

	limitation	Fuel deliv	rery characteristics (5a) speed (5b)	liting	-	Torque- travel	
$\overline{}$	intermediate speed		cm /1000 strokes			rev/min 8	Control rod travel mm
•	1340-1350 *	800	82,0 - 85,0 (80,0 - 87,0) 74,0 - 76,0	100	112,0-124,0 (109,0-127,0 = 16,0-16,6 mm RW	1300 1000 700 500	12,3+0 12,3+0 12,4+0 12,5+0
			(72,0 - 78,0)		ge-over point 170 (80-190)		
	strokes - 85,0	strokes rev/min 3	imitation high idle strokes rev/min 3 4 85,0 1340-1350 * 800	Imitation high idle speed	Imitation Imit	Imitation Index Imitation Index Imitation Index	Imitation Imit

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

Upper rated	speed		.	Intermediate			Lower rated	speed	Control rod	Sliding sl	eeve travel
Degree of deflection of control lever	Control rod travel	Control rod travel mm rev/min	(1a) (2a)	Degree of deflection of contro- lever	l	Control rod travel	Degree of deflection of control lever	rev/min	travel 3	rev/min	mm
J.	2	3		4	5	6	7	8	9	10	11
							(3a)				

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	elivery d stop np 40°C (104°F) 2	Intermediate speed	-	rery characteristics 5a peed 5b	Starting didle switching	ng point	travel	Control rod
rev/min	cm ¹ /1000 strokes	rev/min 3	rev/min	cm ³ /1000 strakes 5	rev/min 6	7	rev/min 8	9
;		•						
•		Í					<u> </u>	

Test Specifications Fuel Injection Pumps 2 WPP 001/4 MAN 16,0 d 1 and Governors

1. Edition

PE 10 A 90 D 520/5 LS 2515 RQ 250/1250 AB 1170-2R Komb.-Nr. 0 400 649 228 1-8-7-6-3-5-2-10-9-4 0-27-72-99-144-171-216-243-288-315° ± 0,5° (± 0,75°) supersedes

company MAN

D 2530 MF

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	4 f	1,5-1,6 ,45-1,65)	mm (from BD)	Zyl. 10	
Rotational speed	Control rod	Fuel delivery	Difference	Control rod	ŧ
	""		cm ³ /		1

Rotati rev/m		travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
12	250	11,5+0,1	10,3-10,4	0,3(0,45)			
2	250	7,4-7,6	0,9-1,5	0,25(0,4)			,

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

rev/min 1 2 3 16,0 10,5 1295-1310 250 6,0 100 min. 7,5 1250 11,5-1 250 11,5-1 360-400 = 2,0 870 11,9-1	Checkin	g of slider	_	Full-load s	speed re	gulation		_	idle spec	ed regula	ition	_	Torque o	control
rev/min travel rev/min	PRG che	ck (1)	Setting po	int	Test spec	cifications	(4)	Setting p	point	Test spe	cifications (5)		(3
4,0 1365-1395 250 5,9-6,1 600 12,1-13 360-400 = 2,0 870 11,9-13	rev/min	travel		rev/min 3	rod travel	red travel	rëv/min 6	<u> </u>	rev/min 7	rod travel	rev/min 9	travel mm	l · · · ·	Control rod travel mm
	600	15,6-16	,4	600	16,0					6,0	250 360-	5,9-6,1 00 = 2,0	600 870	11,5-11,6 12,1-12,2 11,9-12,1 11,5-11,8

on flyweight assembly dimension a =

Speed regulation At 1295 - 1310 min

rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control tever mp 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting for	uel delivery 6
rev/min t	cm³/-1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes	rev/min 6	cm ³ /1000 strokes/ mm 7
1250	102,5-103,5 (100,5-105,5)	-	800	95,5-98,5 (93,5-100,5)	100	133,0-143,0 (130,0-146,0)
			500	90,0-94,0 (88,0-96,0)	250 \	6,5 mm RW
,						·

Checking values in brackets

7.84

K15

40

WPP 001/4 KHD 1 g 8

3. Edition

En

PES 4 A 85 D 410/3 RS 2610 Komb.=Nr. 0 400 864 055

RSV 325-1150 A 8 B 2163 L A 8 C 2163 L supersede9.83

combany KHD

engine F 4 L 913 55 kW (75 PS

55 kW (75 PS)₁ bei 2300 min Schlepper DX 80

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Identification S 16

A. Fuel Injection Pump Settings

Port closing at prestroke (2,45-2)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (forque-control valve)
rey/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1150	11,3+0,	6,8 - 6,9	0,3(0,45)			
325	9,1-9,	1,5 - 1,9	0,2(0,4)			
						1
			·			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	Upper rated speed Intermediate rated speed 4 Lower rated speed						que control			
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	•	-	-	ca. 19	325	8,7	1150	1,3+0,1
10036	x = 1	,5				İ	1	min.19,0	1	2,1+0,1
ca.55_	10,3	1190-1200	·				i .	9,1 - 9,3	800	11,8+0,2 11,6+0
§a.55	4,0 1400	1245-1275					470	50 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		6 Rotational- speed limitat.		el delivery tracteristics	Starting Idle	fuel delivery	Sa) Idio	stop
		Note changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm 11000 strokes	rev/min 8	Control rod travel mm 9
1150	68,0-69,0 (66,0-71,0)	1190-1200*	300	65,0-67,0 (63,0-69,0)	-	-	-	-
			500	58,0-61,0 (55,5-63,5)				

Checking values in brackets

* 1 mm less control rod travel than col 2

40

WPP 001/4 ETC 3.9 c 5. Edition

En

PES 4 A 90 D 320 RS 2634 RSV 300-1025 A 1 B 2153 R

supersede5.84 company Eicher

1 - 2 - 4 - 3 je $90^{\circ} \pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

engine EDL 4-2 65 kW (88 PS)

Komb.-Nr. 0 400 824 235

All test specifications are valid for Bosch Fuel Injection Pump Test Banches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.15**-**2.35)

mm (from BDC\$ RW=9.0 - 12.0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning
rev/min	mm	cm³/100 strokes	cm ³ / 100 strokes	mm 2	cm³/100 strokes	हूँ इंडिया इंडिया
1025	12,6+0,1	8,1 - 8,2	0,2(0,45	-		and the state of t
300	10,9+0,2	4,4 - 4,9	0,2(0,4)	-		
			·			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min		Intermediate Degree of deflection of control lever	rated spe	Control rod travel mm	Degree of deflection of control lever	rated spe rev/min 8	ed Control rod travel mm 9	\sim	que control Control rod travel mm 11
loose	800	0,3 - 1,0	•	-	-	ca. 16	300	10,5	1025 500	12,6+0,1 13,2+0,
ca. 46	11.6	2,25					1	10,9-11,1 60=2,0		12,9+0,
(§). (%)	4,0 1260	1095-1125								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-10	ad stop	6 Rotational speed limitat	(3a) Fuel delivery Starting fuel delivery characteristics Idle				(5a) Idi	(5a) Idle stop	
Test oil temp 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note changed to rev/min 3	rev/min cm³/1000 strokes		rev/min cm³/1000 strokes 6 7		rev/min 8	Control rod travel mm 9	
1025	81,0-82,0 (79,0-84,0)	1065-1075*	750	83,5-86,5 (81,5-88,5)		19,5-21,0 mm RW	-	,-	
			500	77,0-79,0 (75,0-81,0)					

Checking values in brackets

* 1 mm less control rod travel than col 2

9.84

Testoil-18:0

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BA0 13.8 a

2. Edition

PE 12 A 90 D 521 RS 2648

ROV 325-1500 AB 1164 R

supersedes 84
Baudouin DF 12 AN, S engine 308 kW

Komb.-Nr. 0 400 650 002

1- 4- 9- 8- 5 - 2 - 11- 10- 3 - 6 - 7 - 12

 $0-15-60-75-120-135-180-195-240-255-300-315^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$ Specifications apply to test tubing 1 680 750 015

All test specifications are valid for Bosch-Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Start of delivery marking, mark cylinder 1 at 24° on the timing device.

Port closing at pres	troke	(2,10-2,30)	mm (from BDC)			<u></u>
Rotational speed	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1500	9,6-9,7	6,2-6,3	0,3(0,45			
325	6,0-6,2	1,1-1,7	0,25(0,4			
1	•	1			E	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	ed	Lower rated	speed		Sliding s	Sliding sleeve travel	
Degree of deflection	rev/min Control	Control rod ta	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1	
ief control	rod travel mm		of control	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/min	mm	
1	2	3	4	5	6	7	8	9	10	11	
max.	1500	15,2-17,8	•	-	-	ca. 13		min.7,5 6,0-6,2	300 700	0,9-1,0 3,1-3,2	
ca. 46	4,0	154%-1550 1595-1625					355-	415=2,0 max.1,0	1100 1500	5,1-5,2 8,4	
ļ	1700	0-1,0	**************************************			345-46					
						3 a			<u> </u>	<u> </u>	

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) timitation intermediate speed	Fuel deliv	rery characteristics 58 peed 56	Starting Idle switchir	. •	Torque- travel	control (5)
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm²/1000 strokes	rev/min	travél mm
1	2	3	4	5	6	7	8	9
1500	61,5-62,5 (59,5-64,5)	1540-1550*	-	-	100	113,0-123,0 (110,0-126,0) =19,5-21,0 mm RW	-	•

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.84

40

WPP 001/4 EIC 3,9 g 1
4. Edition

Er

PES 6 A 80 D 320 RS 2652

RSV 300-1150 A 0 B 2001-2 R A 0 C 2001-2 R supersed 84 Eicher company EDL 6-2

Komb.-Nr. 0 400 876 317

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

43

2, 15-2,25 (2 1-2 3)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	fuel delivery	Spring pre tensioning (torque control valve)
rév/min 1	mm 2	cm ¹ /100 strokes	cm / 100 strokes 4	mm 2	cm·/100 strokes	mm 6
1150	12,0+0,1	7,8 - 7,9	0,25(0,4)			
300	8,3-8,5	2,0 - 3,0	0,2(0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	l rev/min	Interme	diate rated	speed	Lower rated speed 3 Torque contr				
Degree of deflection of control lever	Controt rod travel mm	Control rod fravel mm rev/min				Control- lever deflection	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	in degrees 7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 25	300	7,9	-	-
	X =	4,75					100	min. 19,5		
						<u> </u>	300	8,3 - 8,5		
(a. 49 (2a)	11,0 4,0 1430	1190-1200 1285-1315 0,3-1,7					450-5	0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	III load stop	6 Rotational speed limitat	11.3/11	uel delivery naracteristics	Starting (luel delivery 5	ery 5 4a Irdle stop			
rest oil to	emp 40 C (104 F) cm//1000 strokes 2	Note changed to 1 revimin 3	rev/min	cm:/1000 strokes	rey/min	cm/1000 strokes 7	rev/min	Control rod travel mm		
1150	77,5-78,5 (76,0-80,0)	1190-1200*	600	71,0-73,0 (69,0-75,0)	100	19,5-21,0 mm RW) -	~		

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

WPF 001/4 FOR 6,6 a

1. Edition

PES 6 A 95 D 410 RS 2688

ROV 350-1400 AB 1202 L

supersedes

Komb.-Nr. 9 400 085 231

compationd engine6,6 L NA

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,15-3,25

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,1+0,1	7,1-7,3	0,35(0,6)			
350	6,4-6,5	0,7-1,1	0,35(0,55)		
				:		
į	}	1				<u> </u>

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		^	Intermediate	rated sp	ed		Lower rated	speed	•	Sliding s	leeve travel
	rev/min Control	Control rod	(18)	Degree of deflection		Control ro- travel	d	Degree of deflection		Control rod travel		0
	rod travel	mm rev/min	28	of control lever	rev/min	mm	•	of control lever	rev/min		rev/min	
1	2	3		4	5	6		7	8	9	10	11
max.	1430	15,2-17	,8		-	-			100 350	min. 9,0		1,8-2,1 3,1-3,5
ca. 63	9,1	1440-145							720-7	(, , , , ,		5,4-5,7 8,5
	4,0 1680	530-156 0 - 1,						320-480			430	0,3
								3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np 40°C (104°F) 2	Rotational-speed (2b) timitation intermediate speed rev/min	Fuel deliv high idle s rev/min	ery characteristics 5e ceed 5b cm³/1000 strokes	idia switchir	. •	Torque- travel	Control 5 Control rod travel
rev/min	cm ³ /1000 strokes	2 YeV/min	4	5	A	7	8	9
1400	70,5-72,5 (68,5-74,5)	1440-1450*	50Ó	50,5-53,5 (48,0-56,0)	100	112,0-122,0 = 19,0-21,0 mm RW	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.84

Geschäftsbereich KM. Kundendienst. Kfz-Ausrustung.

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WPP 001/4 LIE 8,4 a

1. Edition

Er

PES 6 A 95 D 410 RS 2689 RSV Komb.-Nr. 0 400 876 322

RSV 400-1000 A 1 C 2187 L

supersedes Liebherr company D 906 NA

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,7-2,8

Port glosing at prestroke

ke (2,65-2,85)

mm (from BDC)

Rotational Speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
revimin*	mm 2	cm:/100 strokes	cm ⁻ / 100 strokes 4	mm 2	cm·/100 strokes	mm 6
1000	9,7-9,8	8,1-8,3	0,35(0,6)			
400	6,1-6,3	1,0-1,6	0,35(0,55	,		,
				•		

 $ilde{\mathbb{Z}}$ Adjust the fuel delivery from each outlet according to the values in lacksquare

B. Governor Settings

1 Uppe	r rated spend	rev/min	Interme	ediate rate	od speed	(4)		rated speed	3 Torque control		
Degree of deflection of control	Control rod travel mrn	Control rod travel				Control lever deflection	rev/min	Control rod travel mm	rev/min	Control rod travet mm	
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11	
lassa	800	0,3-0,7	-	_	-	ca.23	400	5,7	1000	9,7-9,8	
loose	. X =	2,5					400 455-51	6,1-6,3	550 430	9,7-9,9 10,9-11,5	
ca. 50	8,7 4,0 1230	1040-1050 1065-1095 0,3-1,4	1				455-51	J=2,U	430	10,5=11,5	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	li-load stop	6 Rotational speed limitat	11361	Fuel delivery Sta characteristics Idle				
Test oil te revimin 1	cm ¹ /1000 strokes 2	Note changed to 1 rev/min 3	rev/min	cm·/1000 strokes	rev/min	cm ^{-/} 1000 strokes 7	rev/min 8	Control rod travel mm 9
1000	81,0-83,0 (79,0-85,0)	1040-1050*	600	68,5-71,5 (66,0-74,0)	100	125,0-135 (122,0-138		-

Checking values in brackets

* 1 mm less control rod travel than col. 2



WPP 001/4 MB 2,4 d 4. Edition

PES 4 M 55 C 320 RS 60

EP/MN 60 M 46 DR (1) EP/MN 60 M 42 DR (2) EP/MN 60 M 51 DR (3) EP/MN 60 M 43 DR (4) supersedes 1.76
company Daimler Benz
engine OM 616
(1/3-PKW)
(2/4-Transporter)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,70-1,80 (1,65-1,85)

mm (from BDC)

/ max. RW

Festoil-ISO 4113

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 5	Fuel delivery cm ³ /100 strokes 6	Spring pre-tensioning (torque-control valve) mm 7
2250	13,7	3,9 - 4,1	0,2(0,25			
	(+0,1)					
250 1600 1000	9,0-9,2 Sect.C,	0,4 - 1,0 col. 4-6	0,15(0,2 0,25(0,3	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Leakage		Control limitatio breakay		Control		Auxiliary auxiliary		Torque co	control	
Torque control travel	Vacuum pressure drop			Control rod travel		Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod	
mm	mm water col.	s	mmw.c.	mm	mm w.c.	mm	mm w.c.	mm	mmw.c.	mm	
1	2	3	4	5	6	7	8	9	10	11	
1,1+0,1	500-480	10	520	13,7	580 615	9,2-13,7 6,2-10,7	675 850	9,2-10,2 7,7- 8,7	150 250	14,8-14,9 14,4-14,8	
rotational sp	 e test (cols.4- eed 500 rev/mir vay (cols. 4-5)	11) 7.	550-		675	3,2- 7,2			350 520	13,9-14,3 13,7-13,8	

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop screw est oil temp. 40°C (104°F)			ery character	stics	idle (stop)** idle (imbalance)		Control road travel from full-load to lidle
rev/min	Vacuum mm wat col	cm ³ /1 000 strokes	rev/min 4	Vacuum mm wat. col 5	cm³/1000 strokes 6	rev/min 7	Vacuum mm wat.col.	mm cm ³ /1000 strokes 8
2250	520	39,7 - 40,7 (38,7 - 41,1)		360	38,9 - 40,5 (37,9 - 41,5)	500	600	3,2 - 4,2
			1000	140	38,2 - 39,7 (37,2 - 40,7)	250	ca. 880	4,5 -10,5

Checking values in brackets

WPF (01/4 MB 2.4 t

1. Edition

En

PES 4 M 55 C 320 RS 106 RSV 350 - 1650 MOC 350 Komb.- 0 400 074 079

Sales model

0 400 074 080

supersedes Daimler Benz company OM 616

46 kW

1 - 3 - 4 - 2 = 0 - 90 - 180 - 270 + 0.50 (0.75)
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,65 = 1,85)

子のなの

mm (from BDC) RW = 20.0 mm

Rotational speed	Control rod travel	91		Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
revitturi 1	mm 2	cm ^{-/} 100 strokes 3	cm·/ 100 strokes 4	mm 2	cm·v100 strokes	mm 6
1630	13,340,1	4,0 - 4,1	0,2 (0,3)			
350	6,1 - 6,	8,6 - 0,8	0,1 (0,15)		
750	13,3 + 0,		0,25 (0,3)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod fravel mm	revimin Control rod travel mm revimin	Intermed	diate rated	d speed	Control lever deflection in degrees		rated speed Control rod travel mm	3 to	rque control Control rod travel mm
loose	800	0,3- 1,0			<u>-L</u>	ca. 40	350	6,2		
ca. 75	12,4 4,0 0,3-1,7	=1670-1680 =1770-1790 =2000								

The numbers denote the sequence of the tests* Adjustment angle = 0° = horizontal control lever position.

C. Settings for Fuel Injection Pump with Fitted Governor

6	ill load Stop emp. 40-C (104-F)	6 Rotational speed limitat	3	iel delivery paracteristics	Starting fuel delivery 5 48 Idle stop			·
ľ	cm :1000 strokes 2	changed to 1 revimin 3	revimin 4	cmাগঞ্জও strokes 5	rev/min 6	cm//1000 strokes 7	rev/min B	Control rod travel mm
1630	40,0 - 41,0 (39,0 - 42,0)	1670-1680	750	36,5 - 38,5 (35,5 - 39,5)	100 350	min. 53,0		
						(5,5 - 9,0)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.84

WPP 001/4 MB 2,4 K 2 2. Edition

En

ON TOTOR

PES 4 M 55 C 320 RS 106 RSV 400-2200 MOC 351

0 400 074 081

supersedes

Daimler-Benz

Komb. 0 400 074 082

company OM 616

 $1-3-4-2 = 0-90-180-270 \pm 0.50 (0.75)$

Sales model

engine 53 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Porticiosing at prestroke

(1.65-1.85)

mm (from BDC) RW = 20,0 mm

Rotational Speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
revernin	mm (2)	cm:/100 strokes	cm ^{-/} 100 strokes	m.m	cm=/100 strokes	nım
1	2	3	4	2	3	6
2180	12,9+0,1	4,0-4,1	0,2(0,3)			
400	6,4-6,6	0,6-0,8	0,1(0,15)			
1000	13,4+0,1		0,25(0,3)	1		
				<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel mm	f rev/min Control rod travel mm rev/min 3	Interd	nediate rat	ed speed	Control lever deflection in degrees 7	Lowe rev/min 8	r rated speed Control rod travel mm 9	(3) To	rque control Control rort Travel Inm
loose	800	0,3-1,0				ca.39	400	6,5	1000 1750	13,4-13,5 13,1-13,4
*ca.70		2240-2250 2370-2390 2= 2550								

The numbers denote the sequence of the test. Adjustment angle = 0° = horizontal control lever position.

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill load stop emp 40 C (164 F)			et delivery aracteristics	Starting f	uel delivery 5	da idea stop Control rod travel	
rev:min	cm=/1000 strakes 2	rev/min	rev/min 4	cm//1000 strokes 5	rev/min 6	cm//1000 strokes 7	rev miri 8	mm 9
2180	40,0-41,0 (39,0-42,0)	2240-2250*	1000	37,0-38,0 (36,0-39,0)	1000	RW = 20,3 min. 53		
					400	6,0-8,0 (5,5-9,0)		
				,				

Checking values in brackets

1 mm less control rod travel than col. 2

7.84

Festoil-ISO 4113

WPP 001/4

MWM 8.8 a

4. Edition

En

PE 6 A 100 0 320 RS 3008

EP/RSV 300-1150 A1B489DR

supersedes

PE 8 A 100..

RS 3009

A1C489 DR EP/RSV 300-1150 A1B489DR

company engine

MWM

A1C489 DR

D/TD 232 - 6

4.84

RQV 300/550-750 AB 660 R, 871 R

D/TD 232 - 8

Instructions P. 3

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.0 + 0.1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	6
1000	9	7,6-8,2	0,4			4
	6 12	3,2 - 4,2 12,3 - 13,4				
200	9	3,4 - 4,6	·			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV_

Upper Degree of deflection of control lever	rated speed	Control rod travel mm	Intermediate Degree of deflection of control lever	rated spe rev/min	Control rod travel mm	4 Lower Degree of deflection of control lever 7	rev/min	Control rod travel mm		que control Control rod travel mm
ca.66	1150 1200 1250	16,0 11,4 5,8	Without	tauxi	liary spr	ca.28 ing	300 100 300	6,0 19 - 21 5,7-6,3		
5	1230 1280 1400	6,0-9,3 1,8-4,0 0,3-1					350 400 500	3,5-4,7 0,6-3,0 0 - 1	266	note

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-loa	d stop	6 Rotationsl- speed limitat.		delivery racteristics	Starting dele	fuel delivery	5a Idle stop		
	40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel	
Instruc	tions 4 - 14	·			100	19,5-21,5 mm 腐			
·					<u> </u>	<u> </u>		travel than col	

Checking values in brackets

1 mm less control rod travel than col.

B. Governor Settings

RQV .. 660R, 871R**

1 Upper Degree of deflection of control lever	rated speed	Control rod travel mm	Intermediate Degree of deflection of control lever	rev/min	ed Control rod travel mm	Degree of deflection of control lever	rev/min	ced Control rod travel mm 9	(3) Toi	que control Control rod travel mm
ca.66	750 770 790	14,8-17,8 9,0-14,0 3,5-10,5	ca.34	600 650	13,7-15,5 8,5-10,0 4,5-7,0		250 300 350	6,8-8,0 4,5-7,0 3,6-4,0		
(5)	800 840	0 - 8		720	U		550 630	1,8-4,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full le	oad stop	6 Rotational speed limitat	(3a) Fuel delivery characteristics		Starting Idle	fuel delivery	(5a) Idle stop Control rod		
Test oil ten rev/min	cm ⁴ /1000 strokes	Note changed to rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm	
Instru	ctions 4 - 14				100	15,7-16,3 mm RW			
			69		300	5,3-5,7 mm RW			

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

1 Upper Degree of deffection of control tever	rated spee	Control rod travel mm	Intermediate Degree of dellection of control lever	rev/min	Control rod travel mm	4 Lowe Degree of deflection of control iever 7	rev/min	Control rod travel mm	3 Tor	Que control Control rod travel mm
	2				<u> </u>					
(5)										

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Printing with Fitted Governor

2 Full-load stop	•	speed limitar characteristics		Starting Idle	fuel delivery	(5a) Idle stop	
rev/min cm ³ /10	00 strus Note changed to rev/min 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	1	travel mm 9
<u>' </u>							
					*		

** Governor ..871R = electromagnetic starting fuel delivery
unlocking (24 volt)
Switch on magnet for max. 15 sec. when testing.

The nameplate described at $\underline{\text{MWM 1.5}}$ a has recently been extended to 2 speeds and 2 deliveries - in column n = (speed) and Q = (full-load delivery) for more accurate setting in the case of governors with torque control.

The following points apply, deviating from WPP 001/4, Supplement 1, setting the governor and the pump:

- (2) Setting according to nameplate n = (speed 1) and Q = (delivery 1); or according to columns 1 and 2
- (3) Is contacted until change of control-rod travel, as read under (2), or (with new nameplate) until the 2 delivery is reached at speed 2; or according to columns 4 and 5
- (6) Is adjusted according to nameplate n = (speed 1 + 20 rpm) or column 3

For repairs on Fendt tractors on which the new nameplate (with 2 speeds and 2 deliveries) has not yet been introduced, the full-load data apply - ordered according to engine types -

according to the above note

In the case of new replacement pumps from Stuttgart warehouse there is no spring retainer. Send for from MWM according to old nameplate.

Cam sequence and angular spacing:

PE 6 A:

PE 8 A:

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)	Rotational-speed limitation	Fuel deliv	very characteristics	Starting fuel delivery ldte switching point	Intermediate rotational spee Torque-contro travel	d
rev/min cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min cm ³ /1000 strokes	rev/min mm 8	
1 2	3	+	 	1 1		
165 PS / 2500 mi						
250 81,0-83,0	1270	750	82,5 - 85,5			
3'162 PS / 2500 mi	n-1					
250 81,0-83,0	1270	750	82,5 - 85,5			
3 162 PS / 2500 mi	n-1					
1250 81,0-83,0	1270					
160 PS / 2300 mi	_n -1					
1150 80,0-82,0	1170	750	82,5 - 85,5			
3'155 PS / 2300 mi	n-1					
1150 80,0-82,0	1170	750	82,5 - 85,5		•	
3 155 PS / 2300 mi	n-1					
1150 80,0-82,0	1170					
A 141 PS / 2300 mi	<u>n-1</u>					
1185 76,0-78,0	1200					
3'144 PS / 2100 mi	n-1					
1050 77,0-79,0	1060	750	82,5 - 85,5			
3 144 PS / 2100 mi	n-1	 				
1050 77,0-79,0	1060					
A 131 PS / 2100 mi	n-1					
73,0-75,0	1090					
F 144 PS / 2000 mi	n-1		······································			
1000 77,0-79,0	1010	750	82,5 - 85,5			•
B'138 PS / 2000 mi	n-1					
1000 77.0-79,0	1010	750	82,5 - 85,5		·	

engine power Full-load delivery Control-rod stop	Rotational-speed	Fuel deliv	very characteristics	Starting fuel delivery	Intermediate rotational speed Torque-control
Test oil temp 40°C (104°F) rev/min cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min cm ³ /1000 strokes	rev/min mm
1 2	3	+	3	 	
B 138 PS / 2000 min 1000 77,0-79,0	1010				
A 126 PS / 2000 min 1030 73,0-75,0	1040				
B 127 PS / 1800 min 900 78,0-80,0	910				
A'115 PS / 1800 min 900 78,0-80,0	910				
A 115 PS / 1800 min 930 74,0-76,0	<u>-1</u> 940				
B 108 PS / 1500 min 750 80,0-82,0	-1 760				
A' 98 PS / 1500 min 750 80,0-32,0	-1 760				
A 98 PS / 1500 min ⁻ 775 76,0-78,0	1 785				
B 162 PS / 2300 min 1150 83,0-85,0 Special output	1170				
D 143 PS / 1800 min 900 89,0-91,0 Emergency power outpu	910			· .	
C 130 PS / 1800 min 900 89,0-91,0 Emergency power outpu	910				

ngine power ill-load delivery ontroi-rod stop est oil temp 40°C (104°F)	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchin	fuel delivery ng point	Intermedi rotational Torque-c travel	speed
v/min cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm

D 120 PS / 1500 min⁻¹

750 90,0-92,0 760

Emergency power output

C 109 PS / 1500 min⁻¹

750 90,0-92,0

Emergency power output

760

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery ng point	Intermediate rotational speed Torque-control travel
rev/min cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	l	cm ³ /1000 strokes	rev/min mm
1 2	3	4	5	6	7	8
= 220 PS / 2500 mi	n-1					
1250 81,0-83,0	1270	750	82,5 - 85,5			
B'216 PS / 2500 mi	<u>n-1</u>					
1250 81,0-83,0	1270	750	82,5 - 85,5			
B 216 PS / 2500 mi	n-1					
1250 81,0-83,0	1270					
F 213 PS / 2300 mi						
1.150 80,0-82,0	1 170	750	82,5 - 85,5			
B'206 PS / 2300 mi						
1150 80,0-82,0	1170	750	82,5 - 85,5			
B 206 PS / 2300 mi						
1150 80,0-82,0	1 170					
A 188 PS / 2300 mi						
1185 76,0-78,0	1200					
B'192 PS / 2100 mi						
1050 77,0-79,0	1060	750	82,5-85,5		·	
B 192 PS / 2100 mi	n-1					
1050 77,0-79,0	1060					
A 175 PS / 2100 mi	n-1					
1080 73,0-75,0	1090					<u>.</u>
F 192 PS / 2000 mi	_n -1					
1030 77,0-79,0	1040	750	82,5 - 85,5			
B'184 PS / 2000 mi	n-1					
1000 77,0-79,0	1010	750	82,5 - 85,5			

Checking values in brackets

* 1 mm less control rod travel than col. 2

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermed rotationa Torque- travel	l speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
 	 	+	+					•

Ì١	2	[3	14	5	<u> 0</u>	<u> </u>	ļ <u> </u>	
R 194	PS / 2000 mi		T	'		•		
1000	77,0-79,0	1010						 _
A 168	PS / 2000 mi 73,0-75,0	n-1 1010						
B 169 930	PS / 1800 mi 78,0-80,0	940						 _
A '154	PS / 1800 m 78,0-80,0	<u>in⁻¹</u> 910						-
A 154 900	PS / 1800 mi 74,0-76,0	<u>n-1</u> 910						
B 144 775	PS / 1500 mi 80,0-82,0	n-1 785						
A'130 750	PS / 1500 mi 80,0-82,0	n-1 760						
A 130 750	PS / 1500 mi 76,0-78,0	n-1 760						
B 216 1150 Specia	PS / 2300 mi 83,0-85,0 al output	1170						
900	PS / 1800 mi 89,0-91,0 ency power outp	910						· .
C 173 900 Emerge	PS / 1800 mi 89,0-91,0 ency power outp	910				•		

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchin	fuel delivery	intermedi rotational Torque-c travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	1	mm
1	2	3	4	5	6	7	8	

D 160 PS / 1500 min⁻¹

750 90,0-92,0 Emergency power output

760

/ 1500 min⁻¹ C 145 PS

750 90,0-92,0 760

Emergency power output

Testoil-ISO 4113

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load o Control-ro Test oil te	Jelivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchir	fuel delivery ng point i	Intermed rotationa Torque- travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	
' - 210 P	' S / 2300 mi	n-1	•	•		•		
1150	105,0-107,0	1170	800	104,5-107,5				
3' 207	PS / 2300 m	in ⁻¹	 	,				
1150	105,0-107,0	1170	800	104,5-107,5				
207 P	S / 2300 mi	n-1				·		
150	105,0-107,0	1170						
188 P	S / 2300 mi	n-1		·····			<u></u>	
185	101,0-103,0	1200						
3'192 P	S / 2100 mi	n-1						
050	103,0-105,0	1060	800	105,5-107,5				
192 P	S / 2100 mi	n-1		· · · · · · · · · · · · · · · · · · ·				
	103,0-105,0	1060						
174 P	S / 2100 mi	n-1						
	99,0-101,0	1090						
192 P	S / 2000 mi	n-1						
000	102,0-104,0	1010	800	104,5-107,5				
'184 P	S / 2000 mi	n-1		······································				
	400 0 404 0			404 5 405 5				

1000 102,0-104,0 1010 800 104,5-107,5

/ 2000 min-1 B 184 PS

102,0-104,0 1000

1010

A 167 PS / 2000 min⁻¹

1030 98,0-100,0 1040

B 168 PS / 1800 min⁻¹

101,0-103,0 900

910

Checking values in brackets

* 1 mm less control rod travel than col 2

96,0-98,0

775

C. Settings for Fuel Injection Pump with Fitted Governor

785

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deliv			fuel delivery	Intermediate rotational speed Torque-control	
rev/min cm³/1000 strokes		rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
<u> </u>	2	3	ļ * ——		 - 	,	 	

<u>A' 153 PS / 1800 min-1</u>		
900 101,0-103,0	910	
A 153 PS / 1800 min-1		
930 97,0-99,0	940	
B 142 PS / 1500 min ⁻¹		
750 100,0-102,0	760	
A'129 PS / 1500 min-1		
750 100,0-102,0	760 ·	
A 129 PS / 1500 min-1		

①

C. Settings for Fuel Injection Pump with Fitted Governor

engine per Full-load of Control-ro Test oil te	delivery	Rotational-speed limitation	Fuel deliv	very characteristics	Idle	fuel delivery	Intermed rotationa Torque- travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min	mm
 	 			 			-1	,
F 292 I 1250	PS / 2500 mi 102,0-104,0	1270	800	100,5-103,5				
B'292 I	PS_/ 2500 mi	n-1				·	•	
1250	102,0-104,0	1270	800	100,5-103,5				
B 292	PS / 2500 mi	n-1						
1250	102,0-104,0	1270						
F 280	PS / 2300 mi		·· · · ·					
1150	100,0-102,0	1170	800	100,5-103,5				
B'275	PS / 2300 mi	n-1						
1150	100,0-102,0	1170	800	100,5-103,5				
B 275	PS / 2300 mi	n-1						
1150	100,0-102,0	1170						
A 250	PS / 2300 mi	n-1						
1185	96,0-98,0	1200						
B'255	PS / 2100 mi	_n -1						
1050	99,0-101,0	1060	800	100,5-103,5				
B 255				;				
1050	99,0-101,0	1060						
A 232								
1080	95,0-97,0	1060						·
F 25 <u>6</u>								
1000	99,0-101,0	1010	800	100,5-103,5				·
B'245								. —
1000	99,0-101,0	1010	800	100,5-103,5				

engine po Full-toad o Control-ro Test oil te	jelivery	Rotational-speed fimitation	Fuel deli	very characteristics	Idle	fuel delivery	Intermediate rotational spee	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	travel rev/min [mm	1
1	2	3	4	5	6	7	8	
B 245	PS / 2000 m	in-1		1	•	i	•	,
	99,0-101,0	1010						
1000	99,0-101,0	1010						
A 222	PS / 2000 m	in-1						
1030	95,0-97,0	1040						
								
B 224	PS / 1800 m	<u>in-1</u>						
900	99,0-101,0	910						
41000	DC / 1000 m	 :1				,		
A'203								
900	99,0-101,0	910						
A 203	PS / 1800 m	in ⁻¹						
930	95,0-97,0	940						
								
B 189	PS / 1500 m	<u>in-1</u>				. 4	•	
750	98,0-100,0	760						
								
<u>A'172</u>								
750	98,0-100,0	760						
A 172	PS / 1500 m	in-1				·		
750	94,0-96,0	760						
/50	94,0-90,0	700						
D 250	PS / 1800 m	in-1						
900	111,0-113,0	910					•	•
	ency power out	put						
<u> </u>	PS / 1800 m							
								
	111,0-113,0 ency power out	910 put						
		·			 			
D 210	PS / 1500 m	<u>in-1</u>						
	111,0-113,0	760						
Emerg	ency power out	put						

engine po Full-load di Control-rot Test oil ten	elivery	Rotational-speed limitation	1		Starting i Idle switchin		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm
1	2	3	4	5	<u> </u>		P	

C 191 PS / 1500 min⁻¹
750 111,0-113,0 760

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MB 2,4 u

1. Edition

En

RSV 350-1650 MOC 350

Komb. 0 400 074 083

Sales model

0 400 074 084

supersedes _{company} Daimler Benz

OM 616

46 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 $1-3-4-2=0-90-180-270 \pm 0.50 (0.75)$

Port closing at prestroke

(1,65-1,85)

mm (from BDORW=20,0 mm

Rotational speed	Control rod travel	Fuel delivery .	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (forque-control valve)
rev/min	nım 2	cm //100 strokes	cm ^{-/} 100 strokes	mm 2	cm // 100 strokes	mm 6
1630	12,5+0,1	3,7-3,8	0,2(0,3)			
350	6,1-6,3	0,6-0,8	0,1(0,15)			
750	12,4+0,1		0,25(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Ì		r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	11 5 /	rque control Control rod travel mm
	loose	800	0,3-1,0				ca. 40	350	6.2		
	ca.76	11,5 4,0 0,3-1,7	1670-1680 1745-1775 7 2000								

The numbers denote the sequence of the test Adjustment angle = 0° = horizontal control lever position.

C. Settings for Fuel Injection Pump with Fitted Governor

20	II load stop	Rotational speed limital (3a) Fuel delivery characteristics			Starting fuel delivery 5			da Idle stop		
resconce revimin	cm /1000 strokes	changed to 1 rev/min 3	rev/min	cm ^{-/} 1000 strokes 5	rev/min	cm /1000 strokes 7	rev/min 8	travel mm 9 '		
1630	37,0-38,0 (36,0-39,0)	1670~1680*	750	33,5-34,5 (32,5-35,5)	100	RW=20,3 min.53,0				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Geschaftsbereich KH. Kundendienst. Ktz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 MB 2,4 u1 1. Edition

En

PES 4 M 55 C 320 RS 106-1 RSV 400-2200 MOC 351

Komb. 0 400 074 086

supersedes _

Sales model 0 400 074 085

company Daimler Benz engine

OM 616 53 kW

 $1-3-4-2=0-90-180-270 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1,70-1,80

Port closing at prestroke (1,65-1,85)

mm (from BDC) RW 20,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (forque-control valve) mm
2180	11,9+0,1	3,55-3,65	0,2(0,3)			
400 1550	6,4-6,6 12,5+0,1	0,6-0,8	0,1(1,5) 0,25(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	Control rod travel mm		Interm	ediate rat	ed speed	Control- lever deflection in degrees 7	Lowe rev/min 8	Control rod travel mm	3 To	rque control Control rod travel mm
1oose	800	0,3-1,0				ca. 40	400	6,5	1550 1750 1950	12,5+0,1 12,1+0,2 11,9+0,2
ca.72		2240-2250 2355-2385 7= 2550					·			11,50.0,2

The numbers denote the sequence of the test $\overset{*}{\bullet}$ Adjustment angle = 0° horizontal control lever position.

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	Rotational- speed limitat		Fuel delivery characteristics		uel delivery 5	4a Id	e stop
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to .) rev/min 3	rev/min	cm ⁹ /1000 strokes 5	rev/mic	cm ³ /1000 strokes	rev/min	Control rod travel mm
2180	35,5-36,5 (34,5-37,5)	2240-2250*	1550	36,0-37,0 (35,0-38,0)	100	RW=20,3 min. 53,0		
				٠	400	6,0-8,0 (5,5-9,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.84

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. £ 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

40

WPP 001/4 MB 3,0 V

2. Edition

En_

PES 5 M 55 C 320 RS 109-1

RSV 350-1650 MOC 350-1

supersedes .84
Daimler-Benz

Komb.-Nr. 0 400 075 007

0 400 075 008 Sales model

company OM 617 engine 57 kW

1-2-4-5-3

Port closing at prestroke

1, 1,1

 $0-72-144-216-288 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,20-2,30 (2,15-2,35)

mm (from BDCRW = 20,0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rey/min	mm 2	cm ¹ /100 strokes	cm·/ 100 strokes 4	mm 2	cm ^{-/} 100 strokes	mm 6
1630	12,5+0,1	3,7-3,8	0,2(0,3)			
350	6,2-6,5	0,6-0,8	0,1(0,15)			
1150	13,2+0,1		0,25(0,3)			
				<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

11 ' /	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intern	nediate rate	ed speed	Control- lever deflection in degrees	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,0		1-,		ca. 40	350	6,2-6,5	1150 1400 1630	13,2-13,3 12,6-12,8 12,5-12,6
*ca.75°	1770-1	680 = 11,6 800 = 4,6 0,3-1,7				* Se	idle a	uxiliary s	pring	at 2,0 mm.

The numbers denote the sequence of the tests

* Adjustment angle = 0° = horizontal control lever positi

C. Settings for Fuel Injection Pump with Fitted Governor

Il load stop	6 Rotational speed limitat			Starting fi Idle	uel delivery 5	4a) Idl	e stop ¡Control rod
cm //1000 strokes	changed to 1 rev/min 3	rev/min 4	cm ^{-/} 1000 strokes 5	rev/min 6	cm·/1000 strokes 7	rev/min 8	travel mm 9
37,0-38,0 (36,0-39,0)	1670-1680*	750	36,5-37,5 (35,5-38,5)	100 350	min. 53,0 6,0-8,0 (5,5-9,0)		
	mp 40 C (104 F) cm //1000 strokes 2 37,0-38,0	speed limitat Note changed to 1 rev/min 3 37,0-38,0 (36,0-39,0) 1670-1680*	speed limitat Note changed to 1 rev/min 3 4 750 (36,0-39,0)	speed limitat Note changed to 1 rev/min cm/1000 strokes 2 1670-1680* 750 36,5-37,5 (35,5-38,5)	speed limital Note changed to 1 rev/min cm*/1000 strokes 2 16.70 – 16.80* 750 36,5–37,5 (35,5–38,5)	speed limitat Note changed to 1 rev/min cm*/1000 strokes 2 1670-1680* 750 36,5-37,5 (35,5-38,5)	speed limitat Characteristics Idle Note changed to 1 rev/min 2 cm*/1000 strokes 2 cm*/1000 strokes 5 rev/min 6 rev/min 8 1670-1680* 750 36,5-37,5 (35,5-38,5)

Checking values in brackets

* timm less control rod travel than col. 2

8.84

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of German, Imprime en Republique Federale d Affemagne par Robert Bosch GmbH.

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WPP 001/4 VOL 6,0 t

1. Edition

En

PES 6 MW 100/320 RS 1004 RSV 325-1050 MW 4/308-1 0 403 476 020

supersedes company TD 60 D engine 112 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,80-2,90 (2,75-2,95)

mm (from BDC) bei RW=9,0-12,0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/min	mm 2.	cm //100 strokes	cm ^{-/} 100 strokes 4	mm 2	cm /100 strokes 3	mm 6
1020	10,8+0,1	8,65-8,85	0,35(0,6)			
325	4,9-5,0	1,0-1,4	0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	Interme	ediate rate	d speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3) 10 rev/min 10	rque control Control rod travel mm 11
loose	800	0,3-1,0				ca.26	325 325 450-51	4,3 4,9-5,0 0=2,0	350 500 1050	11,2-11,3 10,8-10,9 10,8-10,9
ca. 63	9,8 4,0 0,3-1,	1090-1100 1130-1160 7 1300								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill load stop	6 Rotational- speed limitat	18.30	iel delivery paracteristics	Starting f	uel delivery 5	4a) ldi	e stop
Test oil te revimin	emp 40°C (104 F) cm*/1000 strokes 2	Note changed to 1 rev/min 3	rev/min	cm ^{-/1000} strokes	rev/min 6	cm·/1000 strokes 7	rev/min 8	Control rod travet mm 9
1020	86,5-88,5 (84,5-90,5)	1090-1100*			325	10,0-14, (7,5-16,		4,9-5,
					100	min.140 (137)		
						\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

①

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 FIA 8,1 c 2

5. Edition

Testoil-ISO 4113

PES 6 MW 100/720 RS 1012 RQV 300-1100 MW 19 Komb. 0 403 446 114 supersede5.82 Fiat company engine 8365.25.500

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,5 ⁺⁰ ,1	9,6 - 9,8	1,35(0,6)			
300 700 500	6,3-6,4 12,4-12, 11,2-11,	1, 15 - 1, 55 5 3),35(0,55),5 (0,7)),35(0,6))		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed	1	Intermediate	rated sp	eed		Lower rated	speed	1		Sliding s	leeve travel
deflection	rev/min Control	Control rod ta	Degree of deflection		Control rod travel	•	Degree of deflection		Control rod travel		1	<u> </u>
of control lever	rod travel	mm rev/min (28)	of control lever	rev/min	mm (4	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6		7	8	9		10	11
max.	1100 1300	15,2-17,8 0 - 1,0					ca.14	100 300 385-4	min.8, 6,3-6, 45 = 2,	4		
ca.49		1140-1150 1185-1215			<u></u>		3 a)		-,			

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d	- · · · - •	Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics (5a)	Starting Idle switchir	. •	Torque- travel	control (5)
rev/min		rev/min 48	rev/min	cm³/1000 strokes		cm ³ /1000 strokes	rev/min	Control rod travel mm
LDA 1100	0,7 bar 96,0 - 98,0 (94,0 - 100,0)	1140-1150*	LDA 700 LDA 500	0,7 bar 101,0-105,0 (99,0-107,0) 0 bar 75,0- 77,0 (73,0- 78,0)	300	min. 160,0 11,5-15,5 (9,0-18,0) 230 (80-250)	700 1000	12,4+0,1 11,5+0,1

Checking values in brackets

*1 mm less control rod travel than col. 2 8.84

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

FIA 8,1 c 2

Pump/governor	Setting	Measurement	diminution , Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1012 with MW 19	0,5		12,4 - 12,5
		0,3	12,1 - 12,2
		0,2	11,5 - 11,7
		0	11,2 - 11,3
		·	

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

WPP 001/4 RVI 8,8k2

En

restoil-ISO 4113

PES 6 MW 100/320 RS 1016 RQV 300 - 1300 MW 25-1 Komb. 0 403 446 122 1 - 5 - 3 - 6 - 2 - 4 je 60° company: RVI engine: MIDR05.02-12 125 kW (170 PS)

*Start-of-delivery mark 8° after start of delivery with control-rod travel 10.5 mm
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,95-3,15) mm (from BDC)RW 9,0-12,0 mm

Rotational speed	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,1+0,1	9,1-9,3	0,35(0,6]
300 900 500	6,2-6,3 11,1+0,1 9,8-9,9		0,35(0,59 0,5(0,7)	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed	,	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever 7	rëv/min 8	Control röd travel mm 3	rev/min 10	mm 11
max.	1400 1650	15,2-17,8 0-1,0				ca. 12	200 300	max. 4,8 6,2-6,3		
ca.62	10,1	1440-1450 1550-1580					490-	550 = 2,0		
						30	<u></u>			

Torque controt travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	ery characteristics (5a)	Starting Idle switchir	•	Torque- travel	control (5) Control rod travel	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min 8	mm 9	
LUA 1400	0,5 bar 91,0-93,0 (89,0-95,0)	1440-1450*	LUA 900	0,5 bar 88,5-92,5 (86,5-94,5)	100	94,0-104,0 (91,0-107,0)			
			LDA 500	0 bar 59,0-61,0 (57,0-63,0)	100-	230 (80-250)			

Checking values in brackets

* 1 mm less control rod travel than col 2

8.84

D. Adjustment Test for Manifold Pressure Compensator

RS 1016 + 0,25 Gauge pressure bar mm (1) MW 25-1 0,5 11,1 - 11,2 0,2 10,3 - 10,4 0 10,1 - 10,2	Setting	Measurement	diminution Control rod travel difference
MW 25-1 0,5 11,1 - 11,2 0,2 10,3 - 10,4	Gauge pressure	bar Gauge pressure ba	ar mm (1)
0,2 10,3 - 10,4	0,25		10,8 - 10,9
		0,5	11,1 - 11,2
0 10,1 - 10,2		0,2	10,3 - 10,4
		0	10,1 - 10,2
		Gauge pressure	Gauge pressure bar Gauge pressure bar 0,25

Notes

(1) when n

rev/min and gauge pressure

bar (maximum full-load control rod travel)

WPP 001/4 VOL 4,5 f

1. Edition

estoil-ISO 4113

PES 4 MW 100/320 RS 1102

ROV 300-1100 MW 39-4

supersedes

comparVolvo

engine D 45 82,5 kW

1-3 - 4 - 2

0 403 444 106

 $0-90-180-270 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{pmatrix} 2,80-2,90 \\ (2,75-2,95) \end{pmatrix}$ mm (from BDC) RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	10,2+0,1	9,4-9,6	0,35 (0,6)		
300	4,9-5,0	1,3-1,7	0,35 (0,5	5)		
1000	10,2+0,1		0,55 (0,7	b		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	Upper rated speed			rated sp	eed	Lower rated speed			Stiding steeve travel	
	rev/min Control rod travel mm 2	Control rod (1/2 travel mm rev/min (2)	of control	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1200 1350	15,2-17,8 0 - 1,0				ca.12	300 100	4,9-5,0 min. 8,1		
ca. 48	9,2 4,0	1140-1150 1190-1220					320-	650	·	
						3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Control-rod stop		Rotational-speed (2b) timitation intermediate speed	Fuel deliv	very characteristics 58 peed 50	Starting Idle switchir		Torque- travel	Control root	
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min. 8	mm 9	
700	94,0-96,0 (92,0-98,0)	1140-1150*	1000	96,5-99,5 (95,0-101,0)	100 300 100-	19,0-21,0 mm RW 130,0-140,0 127,0-143,0) 13,0-17,0 (10,5-19,5) 220 (80-250)			

Checking values in brackets

* 1 mm less control rod travel than col 2

7.84